
Founder SuperLine 4.6

Anti-Counterfeit Design System

User Guide



FOUNDER

Beijing Founder Electronics Co., Ltd.

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Founder SuperLine Anti-Counterfeit Design System

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Chapter 1

What is Founder SuperLine?

Founder SuperLine anti-counterfeit design system is a digital design application for security against counterfeit and forgery of almost any printed items, fully developed by Beijing Founder Electronics Co., Ltd., the Chinese leading provider of digital solution for pre-press, printing, publishing, the Internet and digital media.

Unlike other anti-counterfeit solutions, Founder SuperLine performs anti-counterfeit design in the platemaking process and implements the security elements in the printing process without incurring otherwise extra cost by traditional solutions. With professional anti-counterfeit effect, Founder SuperLine is specialized in producing guilloche, relief and microtext, lace and latent. It also offers lock-opening, filtering, and variable line widening technologies to meet special needs.

1.1 *Introduction*

Anti-counterfeit elements are found in our everyday life where banknotes, stock shares, certificates, trademarks, etc. all involve in anti-counterfeit design. Anti-counterfeit technologies are available in a variety of forms, among which, the commonly seen solutions include as follows:

Paper: using anti-counterfeit paper, water mark, security line, red-blue fiber silk or colored points;

Printing Technique: flat & relief printing and multi-process printing, multi-color cross-printing, intaglio printing technology, laser holographic iris printing, hand-carved plate press and special color reflection printing;

Ink: ultraviolet fluorescent ink, photo-chromic anti-counterfeit ink, temperature-sensitive anti-counterfeit ink (also known as thermo-chromic anti-counterfeit ink), reactive color-changing ink, magnetic ink, biochemical reactive ink, liquid crystal ink, print-dedicated ink, laser holographic mark plus fluorescent encryption anti-counterfeit ink and anti-alteration ink;

Bar Code: invisible bar code (covered, photochemical treated and invisible ink printed invisible bar codes) and metal bar code;

Laser Holograms;

Anti-counterfeit Tele-code and Telephone Identification System;**Anti-counterfeit Design System;**

Each of the above-mentioned technologies has its own unique strengths. Anti-counterfeit design system stands out by the advantages described below:

Low cost in implementation in the plate making process without incurring any additional cost;

In compliance with the esthetical requirements and the three principles of packaging design, i.e., conspicuous, impression and understandable;

Desired anti-counterfeit effect with diversified line changes. In conjunction with other theories such as optics, it is very easy to accomplish refraction, lock-opening and latent to guard against scanning and Xeroxing.

1.2 Key Features of Founder SuperLine 4.60

Founder SuperLine integrates the latest core technology from Founder Electronics, which is aimed at all companies who make packaging designs for products that are vulnerable to counterfeiting attacks. Instead of using devices like holograms or special inks, SuperLine is to implement the security aspect in the design itself.

SuperLine is specifically targeted at organizations that design documents that are vulnerable to counterfeit, such as banknotes, packaging, passports, certificates, licenses, lottery tickets, contracts, trademarks, etc.

The output file format of Founder SuperLine is in compliance with the international standard of PostScript and suitable for RIP solutions from a host of vendors.

The seemingly simple design in SuperLine consists of such security elements as texture, lace, guilloche, relief, and microtext, which are used to guard against scanning and Xeroxing.

Key features:

Texture

Texture is made by repeatedly varying an element so that it formulates an area of regular, interwoven, and interchangeable gridlines. In our daily life, such kind of background texture can be found in many applications including banknote, check book, air ticket, ID, badge, etc., with the line formation being sparse or dense, visible or invisible.

Texture plays a role of setoff and foil in the anti-counterfeit design system. It

consists of many fine lines coming in different light colors. Only one layer of texture may be seen at a quick glance whereas more detailed representation of variations can be perceived at the second look.

SuperLine offers a complete set of element making tools including copy, mirror and array to generate texture at ease.

A professional texture maker, SuperLine can generate common texture and gradient texture, the latter coming with different line density, width and color gradient.

Common texture is made by multiple identical elements repeating and overlapping themselves and arraying in regular pattern that is stepped and repeated. Usually, flat texture is mostly used in common design. Artistically speaking, flat texture displays tranquility and harmony in uniform step and repeat.

Gradient texture, on the other hand, is created by varying density, width, color, element and size. Emerging in recent years, gradient texture has become the most insurmountable obstacle for counterfeiters to cross over.

Founder SuperLine 4.60 provides a professional texture design tool the Texture function, with which you can actualize diverse texture effects that have change in orderliness and association in change.

Guilloche

Guilloche is an ornamental pattern formed of two or more curved bands that interlace to repeat a circular design. The most eye-catching element, guilloche is often used on banknote, bill, identification card, and passport for added security against counterfeiting. Line density and interlacement are used to enhance the effect of a guilloche.

SuperLine provides a set of powerful tools to generate guilloche in different shape without effort.

Lace

Coming in a variety of patterns, lace is made of one or more elements being continuously repeated until they form a weblike pattern. It is the framework of texture, bringing clear-cut venation for texture, and it is also an important ornamental element in the anti-counterfeit design system.

SuperLine offers **Auto Lace** function to ensure smooth joint between laces, a killer app other security design system does not have.

Relief

Relief is made by bending or folding a group of curves to outline a figure or forms from a flat background, just as in sculpture. Relief effect is seen in such everyday items as banknote, receipt, invoice, bill, logo, trademark, etc. For example, the so-called “lock-opening” technique, it is just one application of

relief that makes use of the light interference phenomenon against forgery.

SuperLine offers a whole set of relief tools including relief on straight line, curve, image, etc. Furthermore, the angle, height and smoothness of relief can all be adjusted to produce a natural looking effect.

Latent

Latent immerses into an image many other elements. For example, you can immerse text or figure into texture or guilloche. Latent is often used in banknote printing technology.

SuperLine develops special cross/straight line fill functions for enhanced latent functions.

Microtext

Microtext is generated with very small letters instead of lines, e.g., by replacing a line segment with a line of letters that usually come shorter than 0.2mm.

Microtext is often applied in the anti-counterfeit design for certificate and identification card.

Because SuperLine allows very small letters to form microtext, the designer only needs to care about whether the output hardware can achieve the accuracy in post press.

Refraction

Refraction is made available in two types: graphic refraction and image refraction. As accomplished by embossing technology in press print, refraction is also known as embossment. According to the line's direction, width and spacing, the refraction makes use of the light's reflection principle to obtain various diverging, rotary and glowing effects. Graphic refraction is often found in packaging applications for cigarette, liquor and medicine, whereas image refraction, in the making of artwork and metal image.

Besides various tools that other similar applications can provide, SuperLine also provides a special graphic refraction module that significantly improves the platemaking efficiency and quality for refraction effect.

Filter and Fish-eye

Filter and fish-eye are usually used in texture generation. By applying functions used in image process to graphic process, they can offer special effect with personal touch for design professionals.

SuperLine provides unique filter and fish-eye functions for generating a wide range of sublime effects.

Magic Kaleidoscope

Founder SuperLine 4.60 adds the Magic Kaleidoscope guilloche design function. By leveraging principle on using cycloids to realize uniqueness and

exclusiveness for your anti-counterfeit work, and combining special algorithm provided in SuperLine anti-counterfeit design system, Magic Kaleidoscope significantly increases the performance and capacity for SuperLine to randomize and combine. With this function, you can design a variety of guilloche patterns at your pleasure by only creating a graphic element and define several parameters.

Wave Generator

Sometimes, for the sake of appearance or anti-counterfeit, you may be required to design some overlapping, cycling or symmetrical graphics in the process of designing patterns. These graphics usually bring strong visual impact because of the splendor, complexity and variety. Founder SuperLine 4.60 anti-counterfeit design system uses varying and waving lines as the basic drawing elements. With the wave generator, you can easily gain the splendid guilloche effects provided by wave vibration.

Bar code

SuperLine provides **Bar Code** function to facilitate the generation, primarily for packaging industry.

Other special functions

SuperLine has offered many other special functions, such as fractal.

In addition, the way SuperLine processes image is to convert image into graphics, with security elements being embedded in implementation. For example, an image is converted into a graphic by imposing Relief on Image effect on the image. Other anti-counterfeit functions in SuperLine include Relief on Image, rasterizing on image, image contour, refraction, etc.

Chapter 2 Install and Un-install SuperLine

This chapter introduces the system requirements and procedures for installing and uninstalling the Founder SuperLine 4.60 anti-counterfeit design system.

2.1 Operating Environment

To make the most of your SuperLine so that it can work better for you, please make sure that you have deployed your computer configuration as we recommend.

2.1.1 Hardware Requirements

Minimum Configuration:

CPU: Pentium III 866 or above

Memory: 256 MB or above

Display: 24 bit true color with a display memory of 8 MB or above

Monitor: 14 inches or above

Hard Disk: 100 MB or above available disk space

Recommended Configuration:

CPU: Pentium IV 1.7 GHz or above

Memory: 512 MB or above

Hard Disk: 20 GB or above

Display: 1024 X 768, 24 bit true color with a display memory of 64 MB or above

Monitor: 17 inches

2.1.2 Software Requirements

Operating Systems Supported

Windows platforms, including Windows 2000 (Professional/Server), Windows 2003 and Windows XP

We recommend you to use Windows XP

2.2 Install Founder SuperLine

In this section, we will introduce you the installation of Founder SuperLine 4.60 in Windows XP operating system. The process on other operating systems may vary a bit, but they are basically the same.

Follow the steps below to install:

1. Insert the installation CD into your CD-ROM drive. If the AutoRun.exe on the CD runs automatically, it will display a window as shown in Figure 2-1. If it doesn't run, please double-click the setup.exe under the Installation folder to begin the installation.

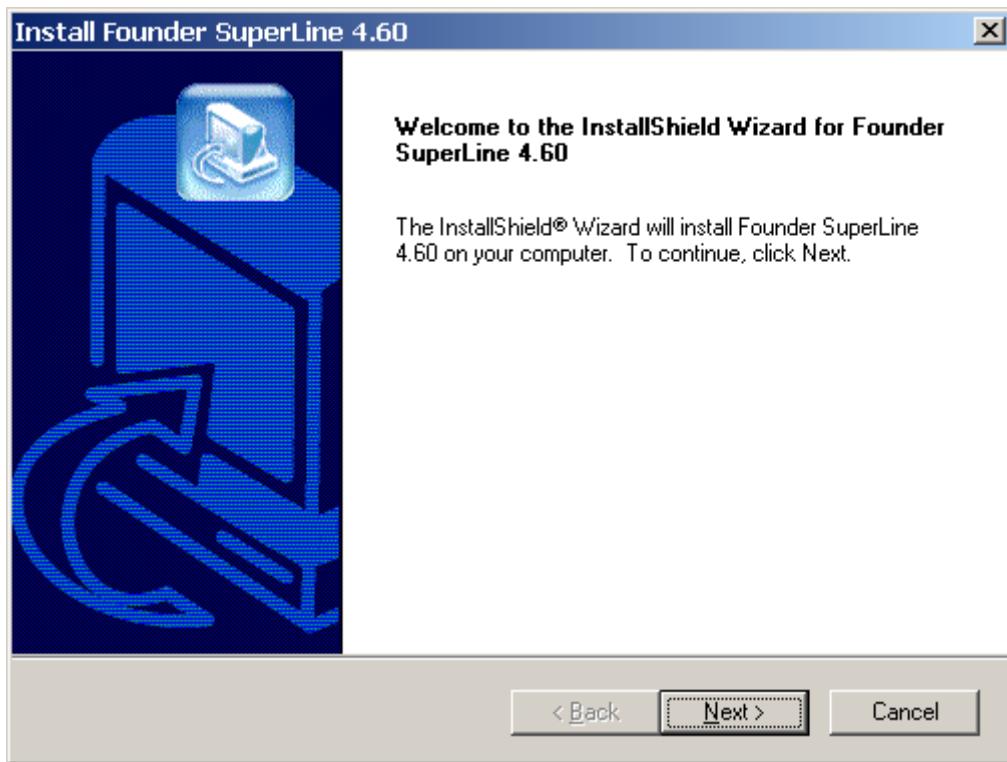


Figure 2-1

2. Click **Next** to open the **License Agreement** window. Read the agreement carefully. If you accept all the terms, click **Yes** to continue. Otherwise, click **Back** to return to the previous window, or click **No** to exit installation.

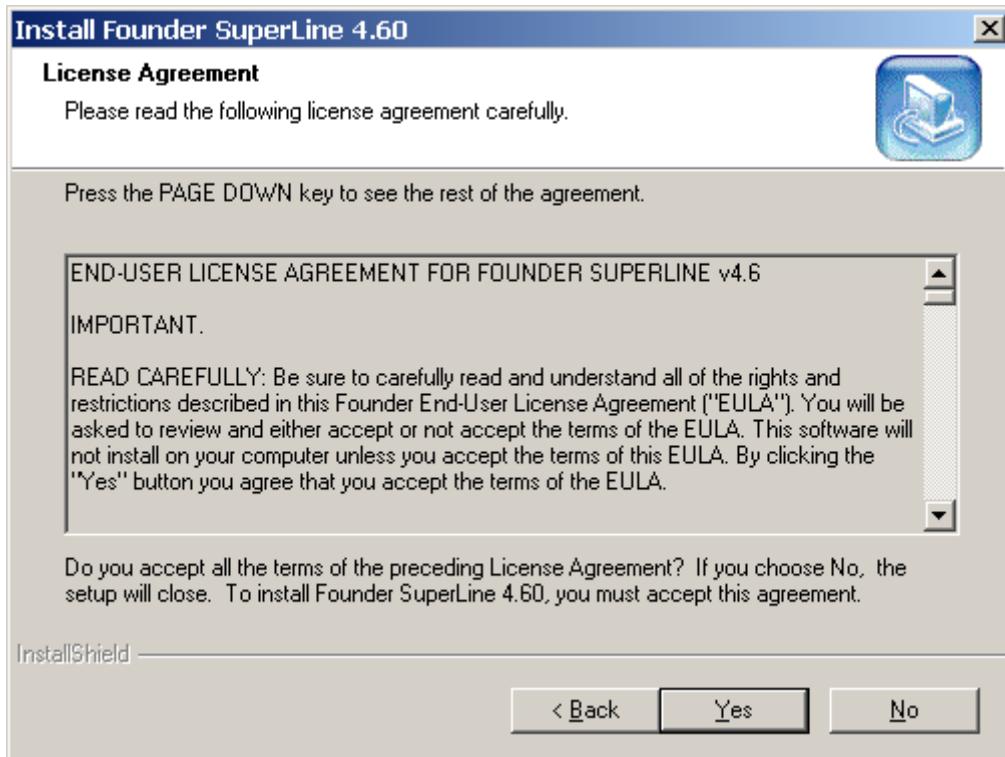


Figure 2-2

3. If you have clicked **Yes**, the following dialog box will appear. Please input the user name and company name, and click **Next** to continue.

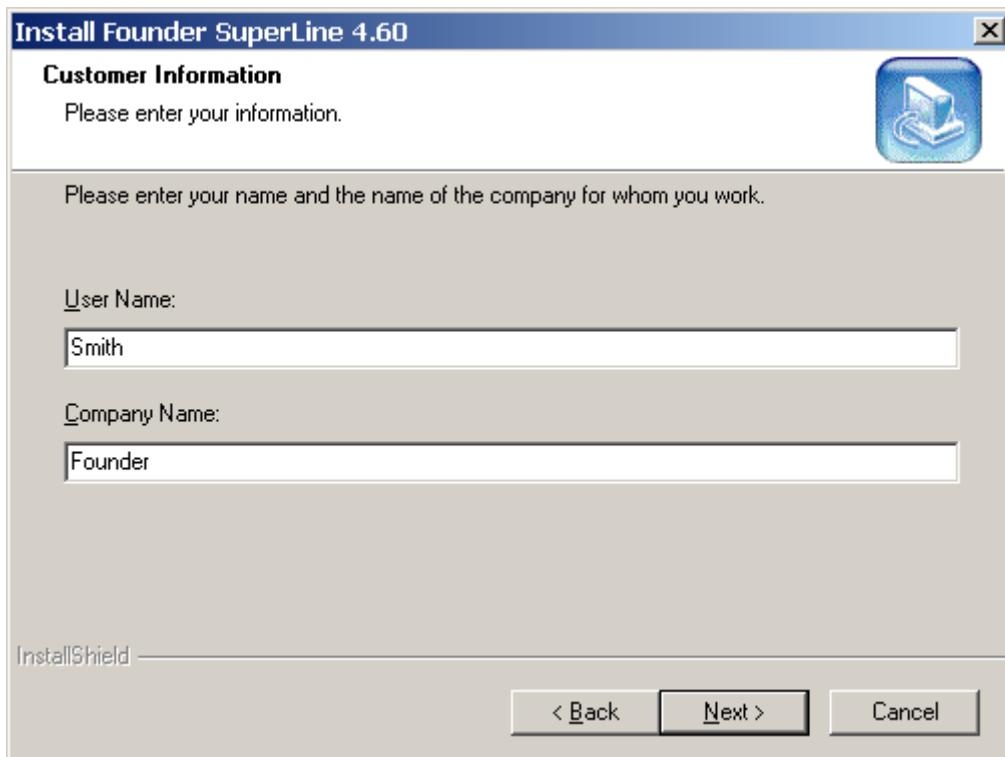


Figure 2-3

4. The **Choose Destination Location** dialog box appears. The install program provides you with a default destination folder. You may click **Browse** to specify another location.

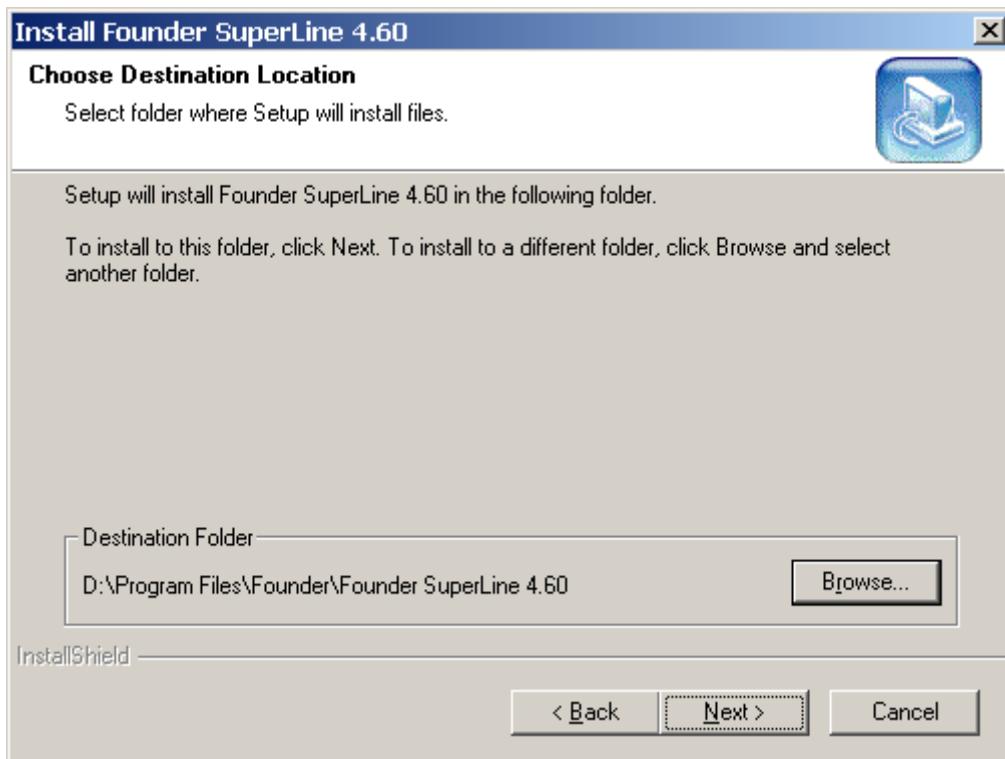


Figure 2-4

5. Click **Next** to open the **Select Program Folder** window. Please define an appropriate program folder and click **Next** to continue.

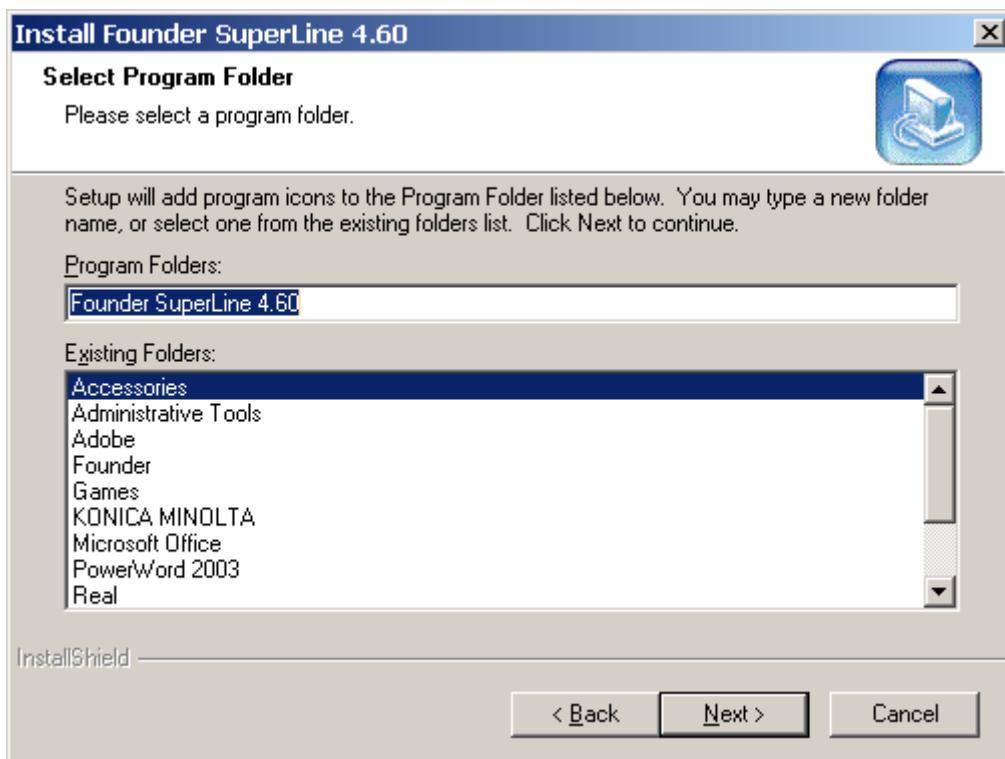


Figure 2-5

6. The install program pops up the following window. You can click **Back** to review your settings, or click **Next** to start copying files.

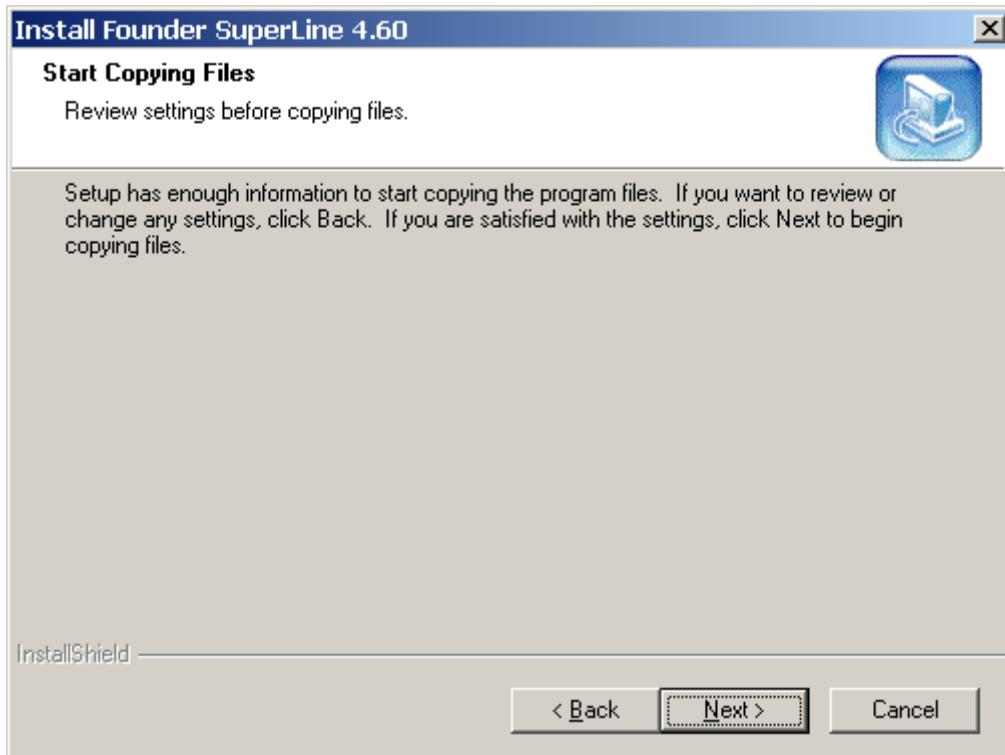


Figure 2-6

7. If you click **Next**, the **Setup Status** window appears. The progress bar displays the installing progress. You can click **Cancel** to stop the installation.

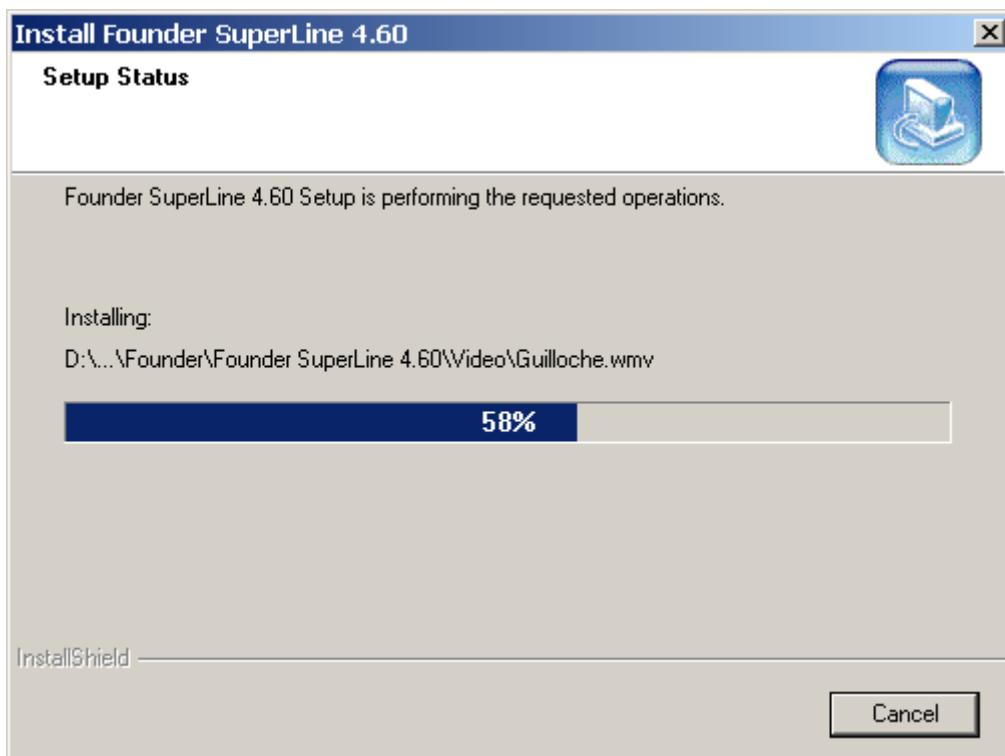


Figure 2-7

8. When the bar reaches 100%, the following dialog box will be displayed.



Figure 2-8

9. You must restart your computer. Please decide whether you will restart your computer right now or not. And then click **Finish** to complete the installation.

2.3 Un-install Founder SuperLine

Before you uninstall Founder SuperLine, please close the application if it is running, and cancel all the unprinted or printing files in the buffer. To uninstall the Founder SuperLine from your computer, perform as follows:

1. Select **Start** → **All Programs** → **Founder** → **Founder SuperLine 4.60** → **Uninstall Founder SuperLine 4.60** to launch the un-install program, the following window displays the progress:

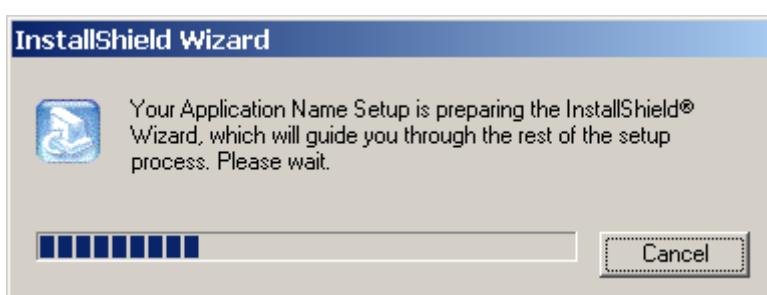


Figure 2-9

2. Once being launched, it pops up the following dialog box:

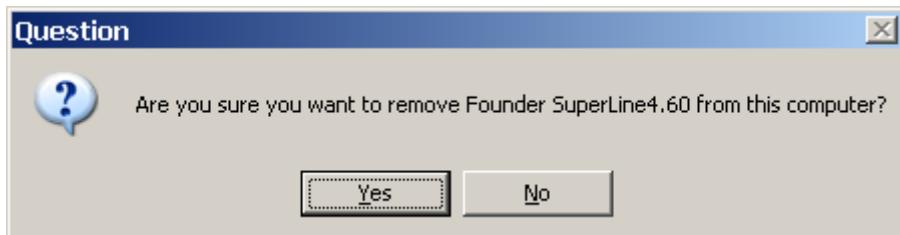


Figure 2-10

3. Click **Yes**, the un-install program will start the removal of your SuperLine. The window as shown in the following figure shows the progress.

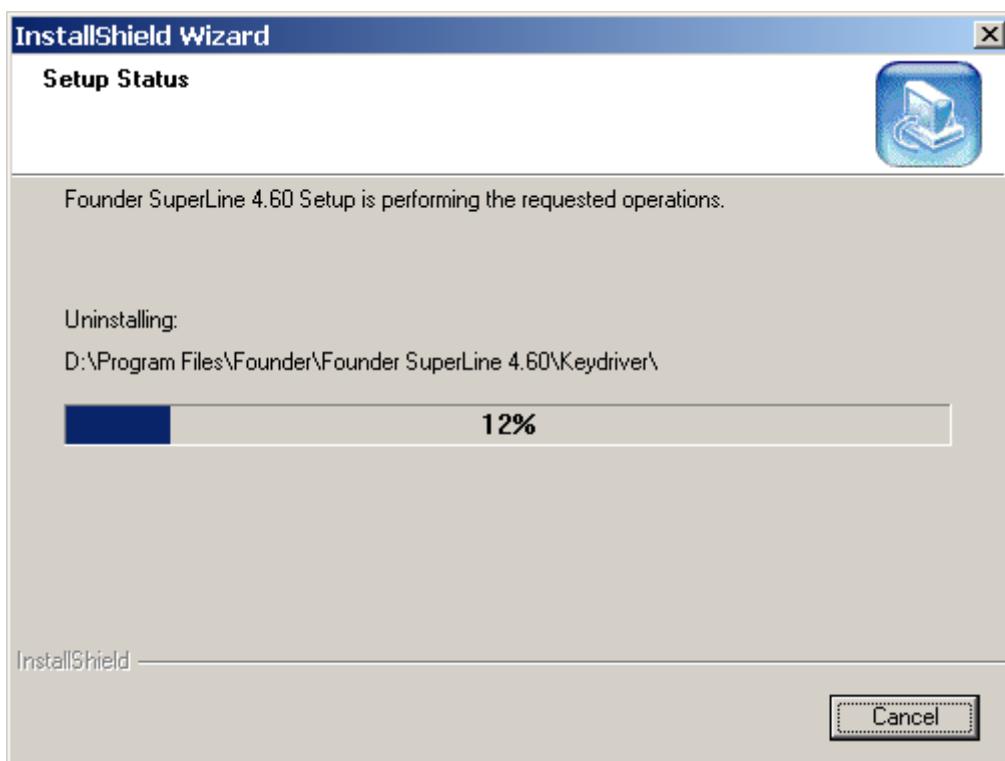


Figure 2-11

4. When the progress bar reaches 100%, the following dialog box will be displayed.

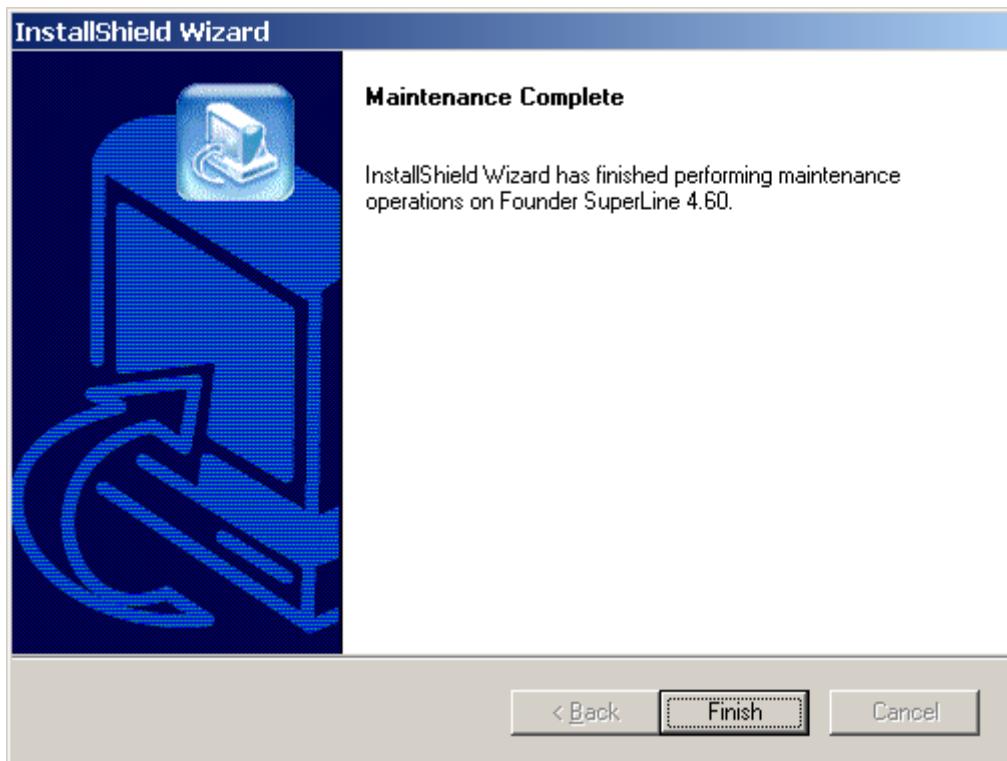


Figure 2-12

5. Click **Finish** to complete the un-installation.

You can also remove the application by selecting **Start** → **Control Panel** → **Add or Remove Programs** → **Founder SuperLine 4.60** → **Change/Remove**.

Chapter 3 Introduction to the User Interface

3.1 Start and Exit SuperLine

3.1.1 Start Founder SuperLine

To start your SuperLine, please first plug the dongle into your computer through a USB port. Otherwise, your SuperLine cannot be started.

When being installed successfully, there will be a shortcut icon for Founder SuperLine 4.60 on your Windows desktop. By double-clicking this icon, as the most common practice, you can easily start your SuperLine. In case of unintentional deletion of this icon from the desktop, you may also start your SuperLine by clicking **Start → All Programs → Founder → Founder SuperLine 4.60 → Founder SuperLine 4.60**.

When being started, the main interface of Founder SuperLine appears:

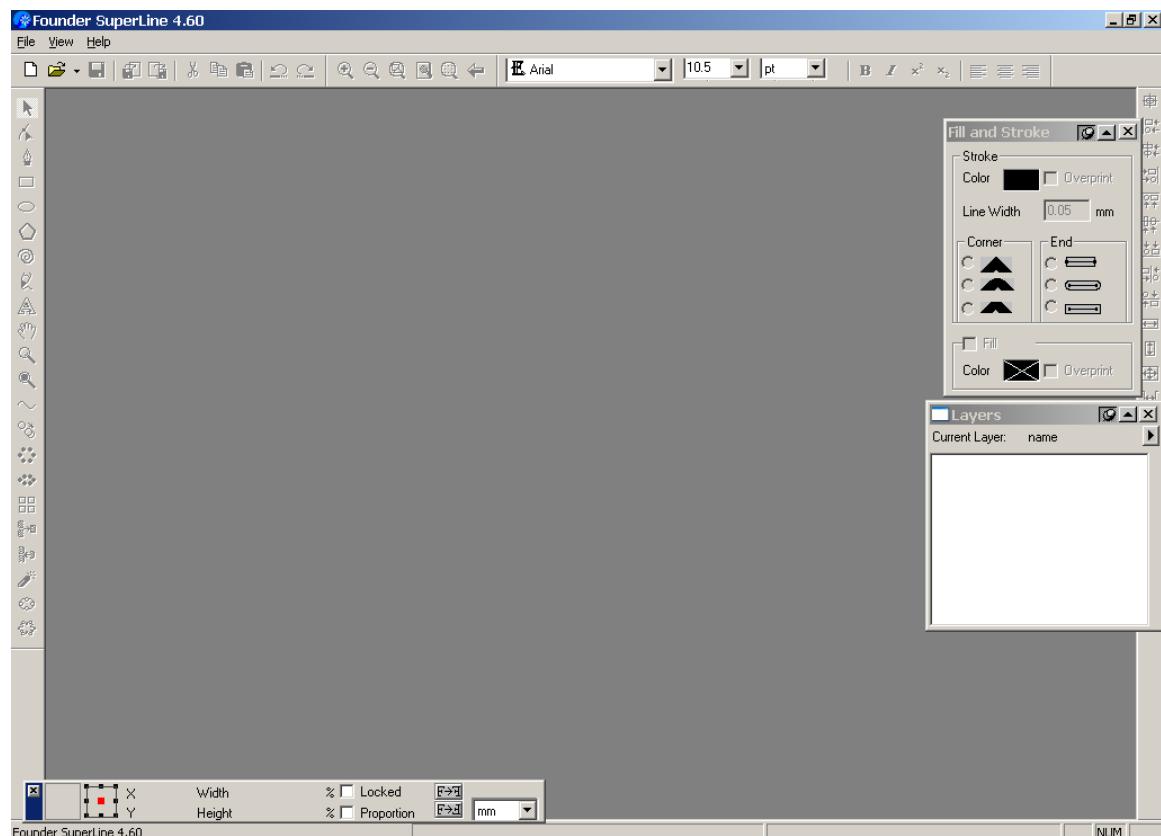


Figure 3-1

3.1.2 Exit Founder SuperLine

Two methods are available to exit Founder SuperLine. One is to select **Exit** command from the **File** menu in the main menu, and the other is to click the exit button at the top right corner of the main interface of Founder SuperLine. In both cases, the system will ask "Are you sure you want to exit Founder SuperLine? " (as shown in the figure below) to guard against exit due to mis-operations. Click **OK** if you are sure you want to exit and **Cancel** if not.

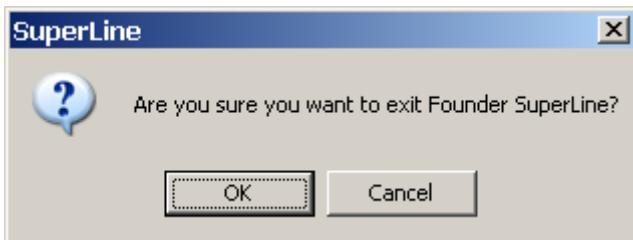


Figure 3-2

When the main interface of Founder SuperLine contains windows being edited with edition results not saved, a SuperLine window will pop up if executing the **Exit** command. Select **No** if you do not wish to save the current results to hard disk. If **Yes** is selected, the system will first save files and then exit Founder SuperLine.

3.2 Main Interface

As shown in Figure 3-1, the Founder SuperLine main interface is composed of the following parts: title bar, main menu, toolbars, document window(s), property windows and the status bar.

3.2.1 Title bar



Figure 3-3

The title bar is located at the top of the main interface. It displays the mark, name and version number of Founder SuperLine. When the current document is maximized, it also displays the document name (a "*" postfix is included in the name if the document is being edited).

On the right of the title, there are three little buttons, , , or , and , i.e., the **Minimize**, the **Maximum** or **Restore Down**, and the **Close** button. With them, you can minimize, maximize or restore, and close the main interface.

3.2.2 Main menu

The main menu provides you with a wide range of menu commands, with which you can perform a variety of operations in your design work. A submenu will be

opened or dropped down by clicking each of the menu names.

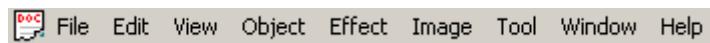


Figure 3-4

The menus vary according to the operation you are performing. The figure above displays the main menu in a case that a document window is opened and maximized. When no document is opened, only **File**, **View** and **Help** menus are available. And commands under each menu vary too. They can be enabled or disabled. When being disabled, they are displayed in gray.

3.2.3 Toolbars

Toolbars are found in four sides of the screen. Founder SuperLine offers a variety of toolbars for different purposes. Each of them contains a group of icons or buttons, a click of which will trigger the corresponding executions.

These toolbars include the **Standard** toolbar (by default, located closely below the menu, can be used to open and save documents, undo and redo operations), the **Graph** toolbar (by default, on the very left of the window, used to draw pictures in the page), **Text** toolbar (to set text properties), **Align** toolbar (to align and distribute objects, located on the very right of the main interface), and the **Zoom** toolbar (to zoom in/out page display). These toolbars can be dragged to anywhere on the main interface. For example:

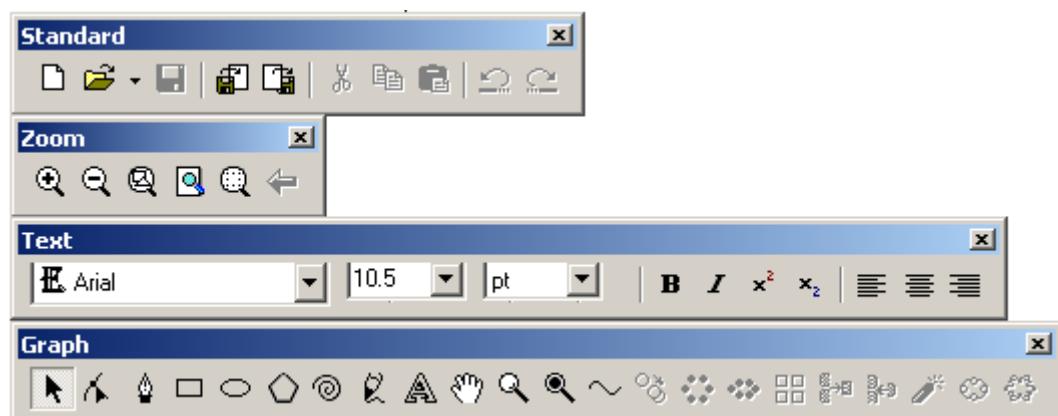


Figure 3-5

You can display or hide any of these toolbars by checking or unchecking corresponding commands under the **View** → **Tool Bar** submenu.

3.2.4 Document window(s)

The document window is the place where the opened page is edited. Each window is dedicated to a particular page. The main interface allows multiple document windows appear at the same time.

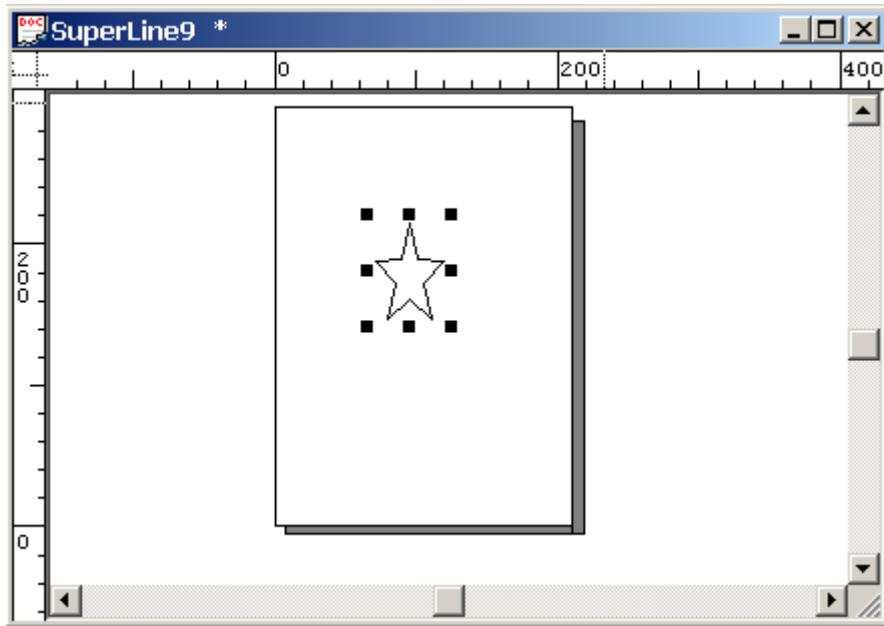


Figure 3-6

A document window generally consists of components such as title, rulers, scroll bars and the page being edited.

Title: At the top of the document window is its title, displaying the corresponding document name (a “*” postfix is included in the name if the document is being edited). When the document window is maximized, the title is displayed in the title bar of the main interface.

On the left of the title bar, there is an icon . Clicking it pops up a system menu, providing commands to move, maximize or minimize, or close the current document window, or adjust its display size, or even switch to other document window when multiple windows are opened. When the current document is maximized, this icon appears on the leftmost the title bar.

The page: the page is the place where you create, edit, save various anti-counterfeit patterns and effects. All specific design work is implemented on the page.

Rulers: Horizontal and vertical rulers are available to each document window. The dotted lines in the rulers indicate the mouse cursor’s current position. Units of ruler readings are optional. It is also possible to create a guide with the rulers: Click in a ruler and move the mouse, then you will see a blue line, which is no other than the guide. Position the guide on the desired position and then release the mouse. To delete a guide, drag the guide with the **Select** tool off the visible area.

You can hide the rulers by unchecking the **Rulers** command under the **View** menu.

Grid and Guides: The grid points and the guides are useful tools for you to perform some operations, such as object snapping. They can be displayed in the

document window by selecting the **Show** commands in the **Grid** or **Guides** submenu under the **View** menu.

Scroll bars: Scroll bars are available on the right and at the bottom of the document window. When a window can only display part of document contents, scroll bars will appear at two sides of the window. The use of the horizontal scroll bar will move a document's visible area horizontally, while the use of the vertical scroll bar vertically.

3.2.5 Property window(s)

Property windows provided in Founder SuperLine 4.60 include the **Pathfinder**, **Layers**, **Panel** and the **Fill and Stroke** windows. The following figure displays the **Fill and Stroke** property window.

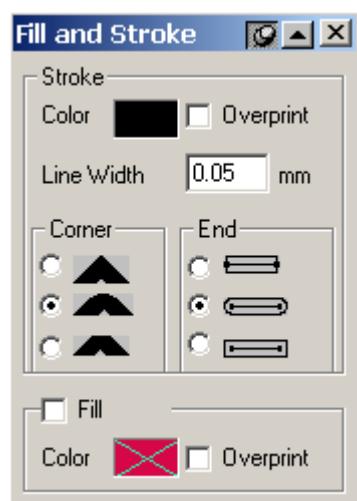


Figure 3-7

With the tools and functions provided by these windows, you can easily complete your design work.

These windows can be displayed or hidden by checking or unchecking corresponding commands under the **Window** menu.

3.2.6 Status bar

At the bottom of the main interface, the status bar displays status information on the current operations or progress.

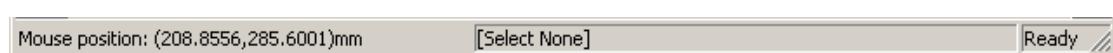


Figure 3-8

3.3 Typical dialog boxes

The dialog box is a main means for the user to control operating procedures and effects. For instance, when drawing a polygon in the page, it is necessary to

determine the polygon's number of apexes and specific shapes, parameters of which are determined in the polygon setup dialog box.

3.3.1 Model and modeless dialog boxes

The dialog boxes are available in two forms, model and modeless dialog boxes.

Features of the model dialog box: when the dialog box is displayed, the application only responds to the operations inside the dialog box, while all operations outside it will be masked. Only when the dialog box is closed may other operations be responded. The below polygon setup dialog box is a model dialog box.

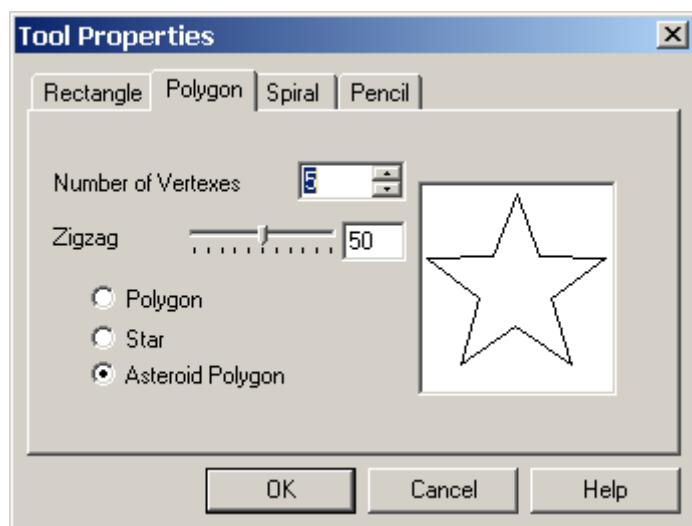


Figure 3-9

Features of the modeless dialog box: when the dialog box is displayed, the application can still respond to the operations outside the dialog box. A case in point is the **Fill Curve** dialog box.

3.3.2 Controls in a dialog box

A dialog box generally includes more than one control as follows:

- **List box**

A general list box is shown on the below. When the arrow button is clicked, the list will drop down to display all options available, which can be selected by clicking or using the keyboard's up/down direction key.

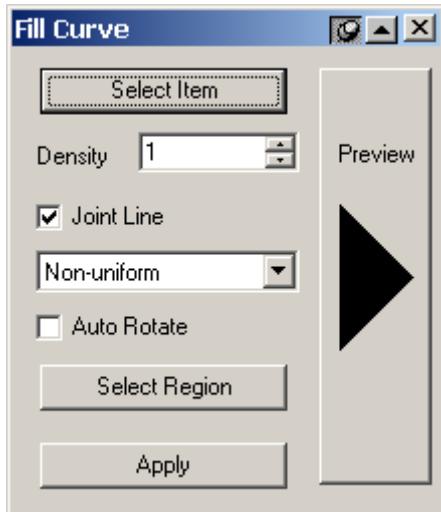


Figure 3-10

- **Round button**

The round button allows one among a group of optional buttons to be selected at one time. The inside of a button will become black if selected by clicking.

- **Check box**

The quadrate check box operates like a lamp switch. The user may select to turn on or off it. When starting or launching a function the check box represents, a “√” mark will be available inside, indicating that function has been enabled, while when disabling or ending the function, the “√” mark will disappear.

- **Number field**

The field allows the input of numbers. In some cases, a pair of upward and downward scroll arrows is available for changing numbers.

- **Color button**

The rectangular color buttons are available to many dialog boxes of Founder SuperLine to display the colors currently selected. If you are not satisfied with the color, you may click the color button and select a new color in the pop-up **Color** dialog box.

3.3.3 Rotate window

The rotate window is actually a kind of modeless dialog box. It has a special feature, i.e., in addition to the **Close** button in the title bar, there are also two special buttons: pin and up-scrolling buttons. As a matter of fact, all resident dialog boxes in Founder SuperLine feature in this style. When the rotate window is opened, clicking the up-scrolling button rotates the rotate window to increase the display space in the document window. Now, the button becomes a downward arrow. Another clicking unfolds the rotate window once again. When pressed, the pin button pins the window in the screen. The window does not disappear even after your operations. Otherwise, the user's mouse operation

will lead to the rotate window to be closed automatically.

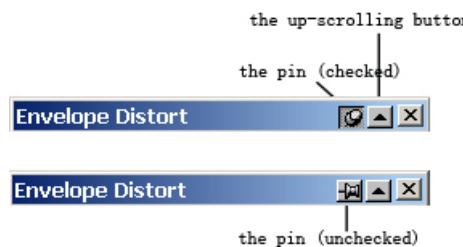


Figure 3-11

The **Envelope Distort**, **Distort along Curve** and **Fill Curve** windows are all rotate windows.

3.3.4 Color dialog box

In the course of page design with Founder SuperLine, you will always be confronted with the issue of color setup, such as setting up a graphic's outline and fill colors. The **Color** dialog box is designed to set up colors by the user. The color selection, setup, color palette and spot color management are all completed through the **Color** dialog box.

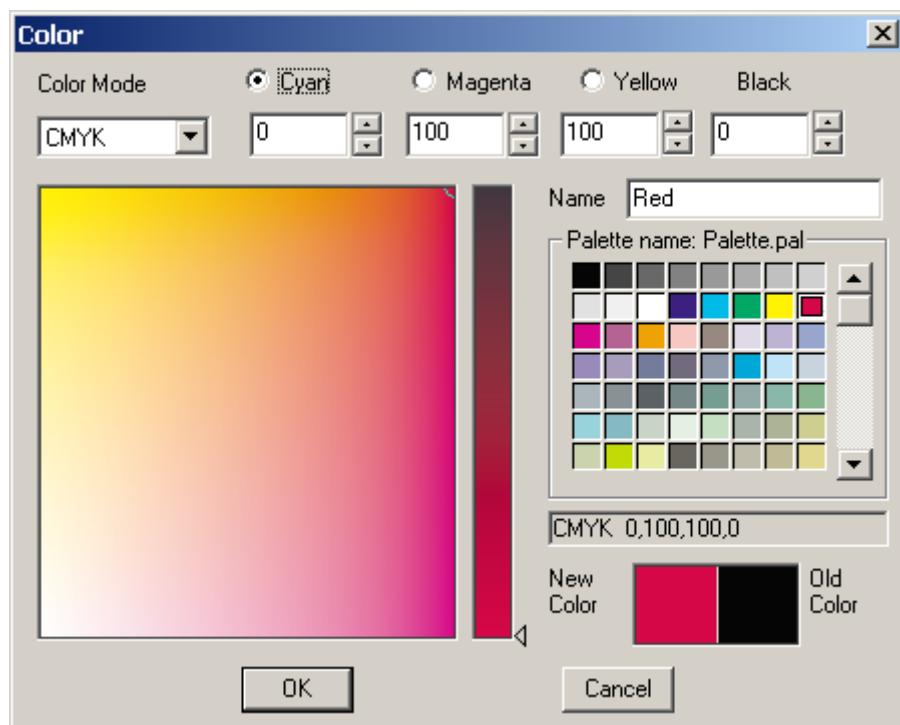


Figure 3-12

1) Set up color properties

Color properties include: mode, value, name and chroma (valid only in the case of **Spot Color** mode). They together determine a color.

- **Select color modes**

Select a model for the active color from the **Color Mode** list box. The **Color** dialog box supports four types of color modes:

- (1) **RGB**: Consist of **Red**, **Green** and **Blue** components, where each component has a value of from 0 to 255;
- (2) **CMYK**: Consist of **Cyan**, **Magenta**, **Yellow** and **Black** components, where each component has a value of from 0 to 100%;
- (3) **HSB**: Consist of **Hue**, **Saturation**, and **Brightness** components, where **Hue** has a value of from 0 to 360 degrees, and **Saturation** and **Brightness** have a value of from 0 to 100%;
- (4) **Spot Color**: To mark colors by using specific names. The color value of a spot color can be defined by the **CMYK** and **Chroma** option (0~100).



Figure 3-13

When a new color mode is selected, the current color's component values will change into those of the new mode, and color value edit boxes will also change (in the **CMYK** or **Spot Color** mode, the **Black (K)** edit box appears, while for the **RGB** or **HSB** mode, the **Black (K)** edit box disappears).

- **Set up color values**

A few methods are available, as are given below:

(1) Input color values directly

The user may input a color's component values in the corresponding color edit box. If the input value is less than 0, the system will select 0 automatically. If the input value exceeds the maximum value, the system will make it the maximum value automatically. You may also click the **Up/Down** button on the right of the edit box (pressing the Up button increases color value, while pressing the Down button decreases color value, until the maximum/minimum value is reached). In the case of **Spot Color** mode, you may also change the chroma value to get a new color.

Every time a color value changes, the system will look at the color palette if there is the same color as the new color (including color mode, color value and chroma). If yes, the system will display the color name in the color palette in the Name dialog box. If the new color is in the **Spot Color** mode, the system will search the **Spot Color** table (excluding chroma value). If no match is found, the system will clear the Name dialog box. As a result, to input a color name, you should first determine the color value and then input the name.

(2) Adjust the position of the round and triangle marks to select color values

To change mark position, you can click in the target position or drag the mouse to the target position. The positions of the round and triangle marks correspond to the settings in the **Color** dialog box (in the case of **CMYK** mode, the value in the **Black** edit box has no matching with the marks, but it affects the color display in the color box and color bar. In the case of **Spot Color** mode, the color box and bar disappear and the value in the **Color** dialog box has no matching with the marks) and the color's radio button serves as a switch.

The radio button for each color component plays a role of switch in the **Color** dialog box. For example, suppose that the **Red** button is selected, the position of the triangle mark corresponds to the value of the red component and the position of the round mark to the values of the green and blue components. The value in the Red edit box changes as you adjust the position of the triangle mark and the values in the **Green** and **Blue** edit boxes change as you adjust the position of the round mark, vice versa.

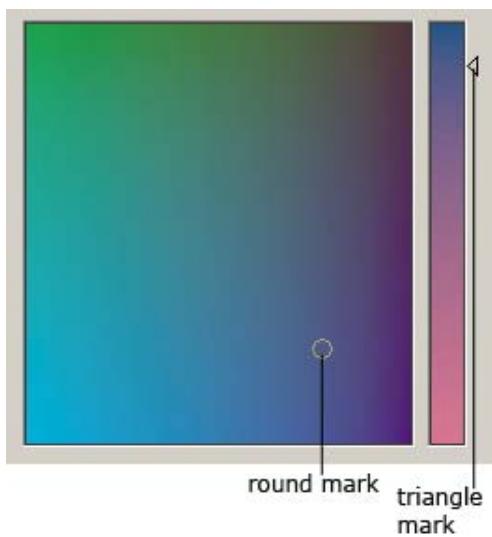


Figure 3-14

The matching of the mark positions with the color values is given below:

The value in the Red edit box is 0 when the triangle mark locates at the bottommost and 255 when locates in the uppermost.

The value in the Green edit box is 0 when the triangle mark locates on the leftmost and 255 when locates in the rightmost.

The value in the Blue edit box is 0 when the triangle mark locates at the bottommost and 255 when locates in the uppermost.

Pick up the corresponding color value when the mark is not on the edge.

(3) New/old color conversion

A **New Color** box and an **Old Color** box are available in the lower right corner of the dialog box, where, displayed on the left is the new color (**New Color** field)

and on the right is the old color (**Old Color** field). Each time the value in the **Color** dialog box is changed or the mark position is adjusted, the **New Color** changes as well.

Click in the **Old Color** field and drag to the **New Color** field, or select the **Replace the new color with old color** command from the right-click pop-up menu, the new color will be replaced by the old color. To substitute the new color for the old color, do the same.

(4) Select a color from the color palette

Click the color block in the color palette. When the color selected becomes a value of the current color mode, i.e., becomes a new color value, the color name will be displayed in the **Name** box.

(5) Select a spot color as the new color value

When the current color is in the **Spot Color** mode, click a color block in the **Spot Color** box and the color will be the new color value.

2) Manage the color palette

The color palette, a color collection, is designed to store some typical colors. The user may edit the color palette, such as add a color, delete a color, rename a color and adjust the color position, etc. The user may also select a color in the color palette as a new color.

The user may create and open a color palette or store the color palette in the hard disk as a file. The extension name of the color palette name is .pal. The initial palette in the **Color** dialog box is Palette.pal. If it is not available, the system will generate a palette automatically.

Revising the palette does not change the palette file (unless you select to save the palette). When you press **OK** to exit the dialog box, the system will save the palette automatically.

- **Add a new color to the palette**

Colors (including spot colors) saved in the palette are available for permanent use, i.e. you can access them in the palette across restarts of SuperLine and different pages. For this purpose, you can add your own commonly used colors to the palette.

To do so, double-click in the **New Color** box or the **Old Color** field, or right-click in any of these two boxes, select the **Add new color to the palette** command from the pop-up menu, the current color will be added to the end of the palette. Moreover, you can also add a new color to the palette by clicking in the **New Color** box, dragging to the inside of the palette (any position as you like) and then releasing the mouse.

If the new color has been available in the palette (the color value, chroma and name are all the same), the addition operation will be forbidden.

- **Delete a new color from the palette**

Select a color to be deleted in the palette, then right-click in the palette and choose the **Delete the color in the palette** command from the pop-up menu. The **Delete** dialog box now appears to confirm your operation.

- **Rename a palette color**

Select the palette color to be renamed, type in a name in the **Name** edit box and then choose the **Rename the color in the palette** command (if, after rename, the same color is available in the palette, this command will be grayed) from the right-click pop-up menu. The name corresponding to the color will be changed.

- **Adjust color position in the palette**

Click the target color block in the palette and drag (now the mouse becomes a cross). If you release the mouse inside the palette box, the color will be adjusted to this position and the colors between the new and old positions will be adjusted forward or backward accordingly. Otherwise, the color position will remain unchanged.

When the mouse has been at the top of the palette and you continue to drag upward, the color will scroll upward automatically until the first line appears. When the mouse has been at the bottom of the palette and you continue to drag downward, the color will scroll downward automatically until the last line appears.

- **Create a palette**

Select the **Create a new palette** command from the right-click pop-up menu. The **Create a new palette** dialog box now pops up. Type in a name for the new palette and click **Save**. The original palette is closed and the palette box is cleared. The subsequent palette operations will affect this palette file.

- **Open the palette from the palette file**

Select the **Open the palette** command from the right-click pop-up menu. The **Open the palette** dialog box appears now. Select a palette file and click **Open**, the original palette is closed and the new palette color is called in.

- **Save the palette**

Select the **Save the palette** command from the pop-up (right-click) menu. The colors in the palette are saved to the current file.

- **Save as another palette**

Select the **Save As** command from the pop-up menu. The **Save As** dialog box pops up. Specify a name and click **Save**. The original palette is closed and the colors of the new palette will be made current.

3) Manage the Spot Color

When **Spot Color** mode is selected, the area where the color box and bar locate

will be replaced by a **Chroma** edit box, a **Delete spot color** button and spot color block(s), see the following figure:

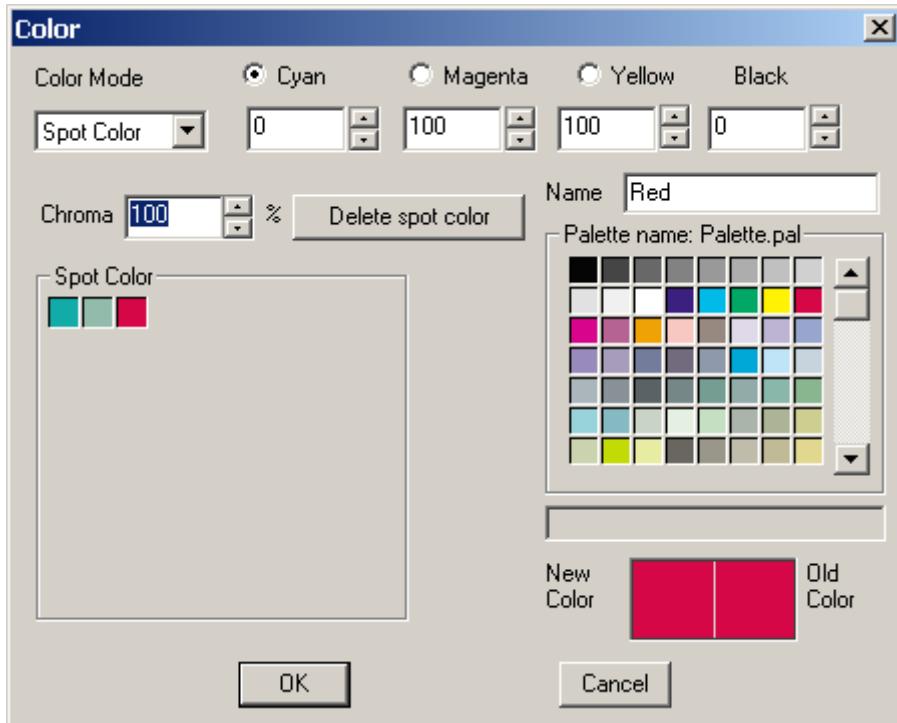


Figure 3-15

- **Add/edit a spot color**

Specify color values in corresponding edit box under the Cyan, Magenta, Yellow and Black color components by typing or clicking the up/down buttons. And determine the chroma of the spot color through the **Chroma** box. And then input the spot color name in the **Name** text box.

Click **OK**, if the name you input is a new one, SuperLine will add the current spot color as a new one, with the name you input, and list it in the **Spot Color** area with a color block; if the name you input is the same as someone in the spot color area, or remains unchanged (in the case that you select an existing spot color), your operation will become an edition or modification to the existing spot color.

Spot colors added for current page are all listed in the **Spot Color** area, shown with a group of color blocks. You can select to use or edit any of them. And if needed, you can also add them to the palette for permanent use. The operation is the same as that for the RGB, HSB or CMYK colors described previously.

When you are loading a block into a page, if the block loaded contains a spot color that has a same name as an existing spot color in the **Spot Color** area, although their color value may be different, in order to prevent conflict in the name, SuperLine will pop up message, prompt you that the name of the spot color in the block load will be changed by adding a "*" symbol behind the original name.

Note: When you make modification to a spot color, the modification will apply to all objects that have used this spot color in the page.

- **Delete a spot color**

When **Spot Color** mode is selected, if you want to delete some spot color in the **Spot Color** area, select it and click the **Delete spot color** button.

If some object in the page has used a spot color, before you delete it, SuperLine will pop up message asking you to confirm the operation. If no spot color is used, SuperLine will directly perform the deletion.

After the deletion, if no spot color exists in the **Spot Color** area, the **Color Mode** option will automatically shift to **CMYK**.

3.4 Document operations

In Founder SuperLine, you can save, open, export and print the designed anti-counterfeit pages by using the **File** menu and the **Standard** toolbars.

3.4.1 New, Open, Save and Close

The document herein refers to the page designed with Founder SuperLine. The extension name of the corresponding document is .SPL.

- **Create a New Document**

A new document is a new design page. To create a new document, select the **New** command under the **File** menu, or click the **New** icon  in the **Standard** toolbar, the following **Page Setup** dialog box will appear.

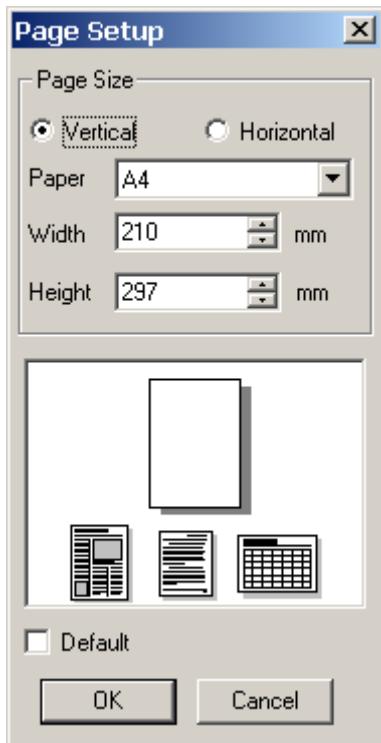


Figure 3-16

When you finish your settings, click **OK** to confirm your setup. The new page then will appear in the main interface, and be the active document allowing direct design. Of course, you may click the **Cancel** button to cancel your creation.

- **Open an existing design document**

To open an existing design document, select **File > Open** or click the **Open** icon in the **Standard** toolbar, the **Open** document dialog box will pop up:

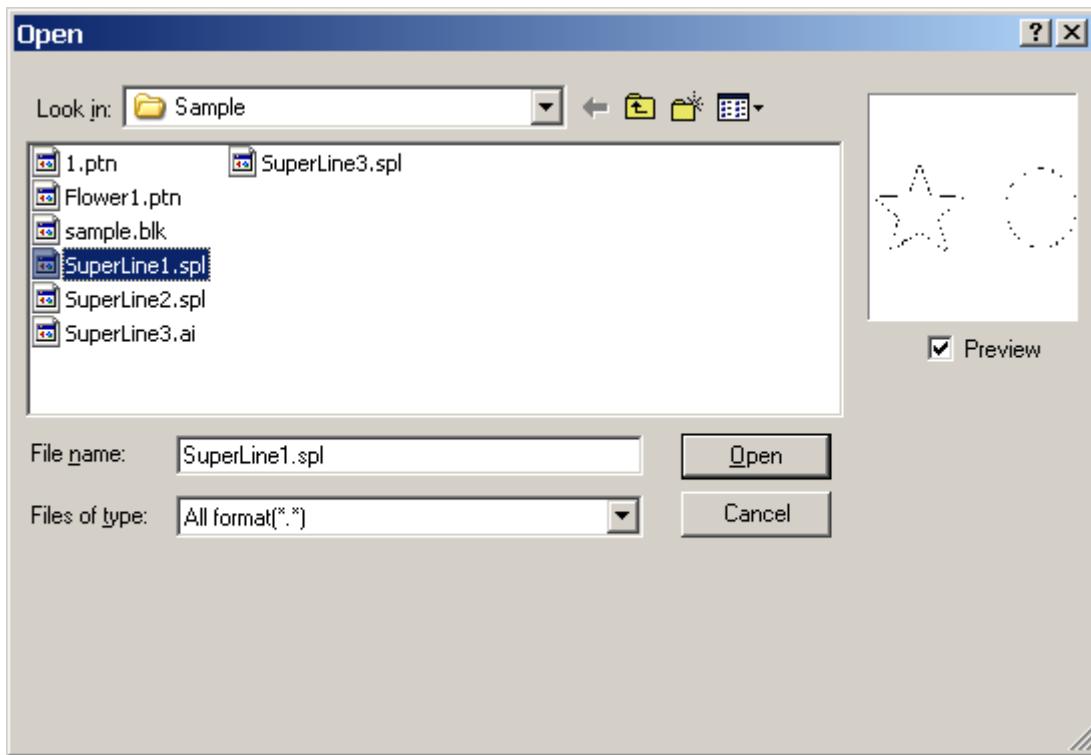


Figure 3-17

This is a standard Windows dialog box for opening files. By default, the *.SPL documents, i.e., Founder SuperLine page documents, under the current directory will be listed. In case of unavailability of the document to be opened in the list box, you may select the appropriate directory or input the complete path to search for it. When the document name is found, click the **Open** button and the specified page document will be opened and displayed in the main interface as the current document, in which you may operate directly.

If the document is recently opened document, you can also open it by clicking the **File** menu, and selecting the corresponding name at the bottom of the menu.

- **Save a document**

You can save a page by selecting **File** > **Save** or click the **Save** icon  in the **Standard** toolbar. If the document has not been given a name (a new document) at the time of storage, the **Save As** dialog box will appear, where the user should specify the document directory, input document name, which is the same as in the procedure. If this is not the case, the current page contents will be saved to replace the original document.

You can also use the **Save As** command under the **File** menu to perform this operation. In this case, you can save the current document into another location or/and with another name. In case of existence of the specified document name, the system will prompt whether to update the document.

- **Close a document**

To end design of the page and close the corresponding document window, select the **Close** command under the **File** menu to close the window. In case that the page has been revised without saving, SuperLine will prompt message asking you whether to save the document.

3.4.2 Import and export

The import and export materialize the document interfaces between Founder SuperLine and other applications. To import refers to place the contents of other files in the page of Founder SuperLine, while to export refers to save Founder SuperLine's page contents as documents understandable by other applications (especially by RIPs).

Founder SuperLine is capable of importing various types of files into a page: image files, Tiff files, PS/EPS files, TXT files and blk (Founder SuperLine Block) files (refer to the Load block section).

Founder SuperLine exports page files as PS, EPS, AI, BMP, blk, Tiff and various image files. Among them, the PS/EPS herein is in compliance with the standard format of Adobe PS Level 2 and can be interpreted by multiple RIPs. The AI format herein is in compliance with Adobe Illustrator and can be inputted by other graphic software.

- **Import**

To import external files, select the **Import** command under the **File** menu, or click the import files icon  in the **Standard** toolbar, the **Import** dialog box will appear, shown as in the following figure:

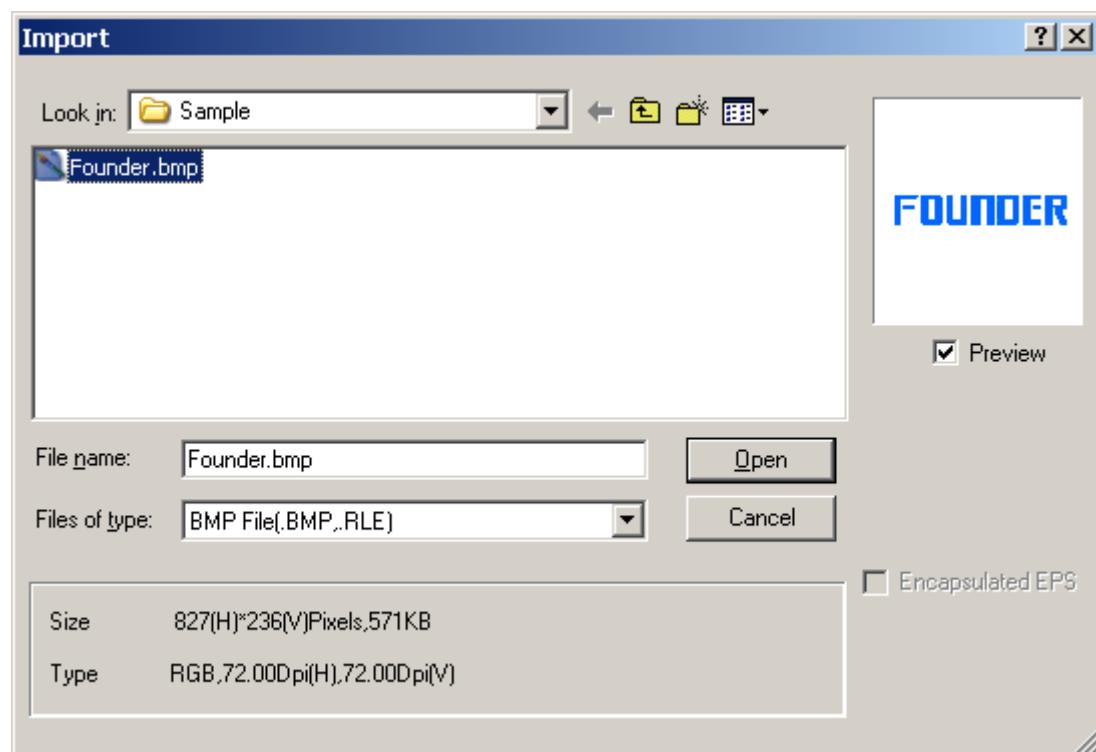


Figure 3-18

Select the file you want to import. When you select the **Files of type** option, in case that an EPS file is selected, the Encapsulated EPS check box is valid. If this check box is checked, the EPS file will be embedded into the page and zoomed, moved, rotated, mirrored and skewed as a whole, but it is impossible to ungroup it for re-editing. If not, the EPS file will be interpreted as separate objects and edited separately. At the time of input, the EPS file is encapsulated, resulting in the EPS object.

If an image file is selected, an image will appear at the lower left corner of the page. At present, Founder SuperLine supports you to import various types of images, including BMP, JPEG, TIFF, TGA, PS, EPS, and so on (do not support JPG of PhotoShop 6 and grayscale map, the PS/EPS only supports the path's import conversion). In case an EPS file is selected and encapsulated, an EPS object will be available at the lower left corner of the page. If it is not encapsulated, then available in the page will be a group object containing all objects of the EPS file.

In case a PS file is selected, available in the page will be a group object containing objects in all pages of the PS file. Founder SuperLine improves the capacity to import PS/EPS files, enabling images and texts to be correctly processed.

And if a TXT file is selected, a text object will be formed in the page.

Click **Open** when you have selected the file to be imported.

- **Export**

To export the page as PS, EPS, AI and BMP images, select **File > Export**, or click the **Export** files icon  in the **Standard** toolbar, the **Export** dialog box will appear:

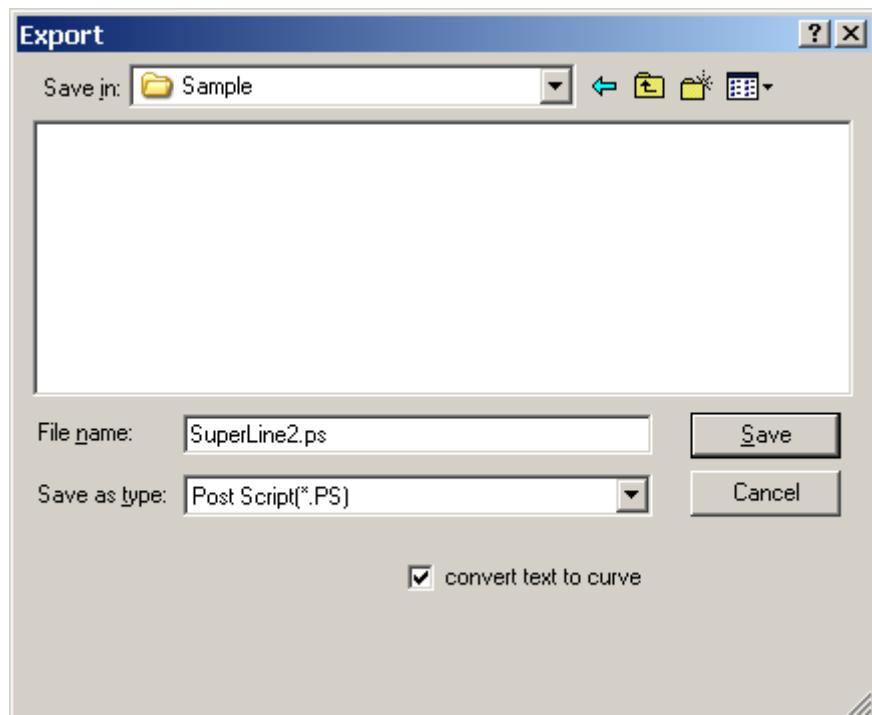
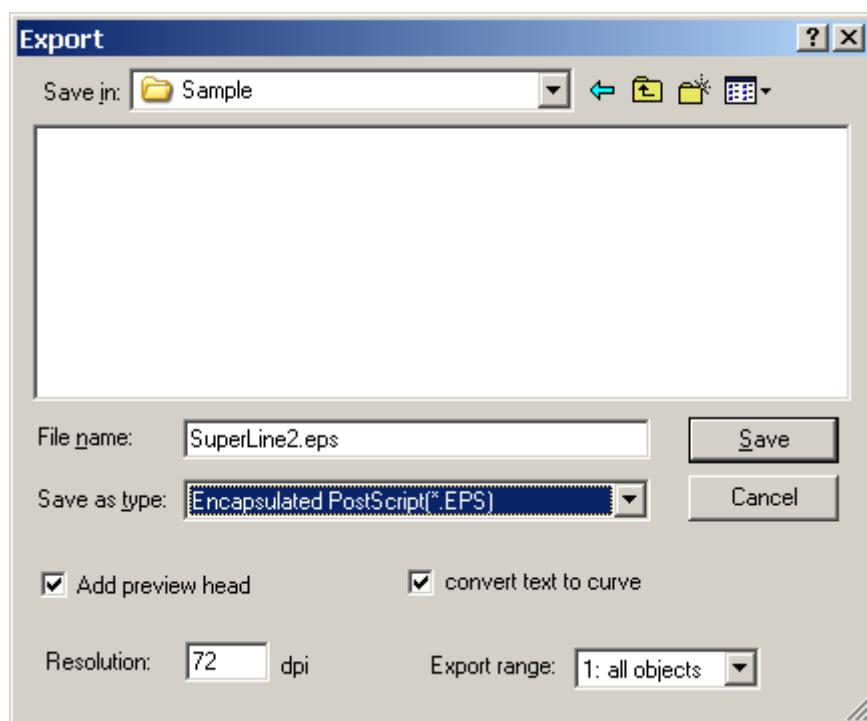


Figure 3-19

Determine the type and name of the exported file in the dialog box. You may select output formats in the **Save as type** list box in the dialog box.

When the **PS** option is selected, the **convert text to curve** check box will appear in the dialog box. If this check box is checked, the text outline will be converted into curves and exported as graphics (there will be not any text information in the PS file). In this way, whether or not the rear-end RIP comes complete with the corresponding font, the text can be exported. Otherwise, the PS file contains text information and the rear-end RIP has to come complete with the corresponding font. Of course, the quality of the text so exported will be better.

When the **EPS** option is selected, the **convert text to curve** check box, **Add preview head** check box, **Resolution** field and **Export range** list box will be available in the dialog box. The **convert text to curve** check box has the same implication as with the PS case. When the **Add preview head** check box is checked, the EPS file exported will include preview images whose resolution is specified in the **Resolution** field (generally, 72 or less. The EPS file will swell remarkably with a high resolution). The **Export range** includes three options: **all objects**, **the whole page** and **objects selected** (the third is available only when a target/targets is/are selected). All objects inside and outside the page will be exported when the **all objects** option is selected. The objects inside the page and the selected objects will be exported when **the whole page** and **objects selected** options are selected, respectively.

*Figure 3-20*

When the **AI** option is selected, the **convert text to curve** check box will

appear in the dialog box. The check box has the same functions as with the case in which PS is chosen. The check box is always chosen automatically and grayed, as when the page is exported as AI, the text has to be converted into curves.

And when the **BMP** option is selected, another set of options will be available in the dialog box. First, it is necessary to determine the resolution of the BMP image, which can be inputted in the **Resolution** field. Next, determine the background color by clicking the **Background color** box and selecting one color in the pop-up **Color** dialog box. Finally, determine the frame width of the BMP image, which can be specified in the **White margin** field. The file size and image width/height change with the resolution and width of the page margin.

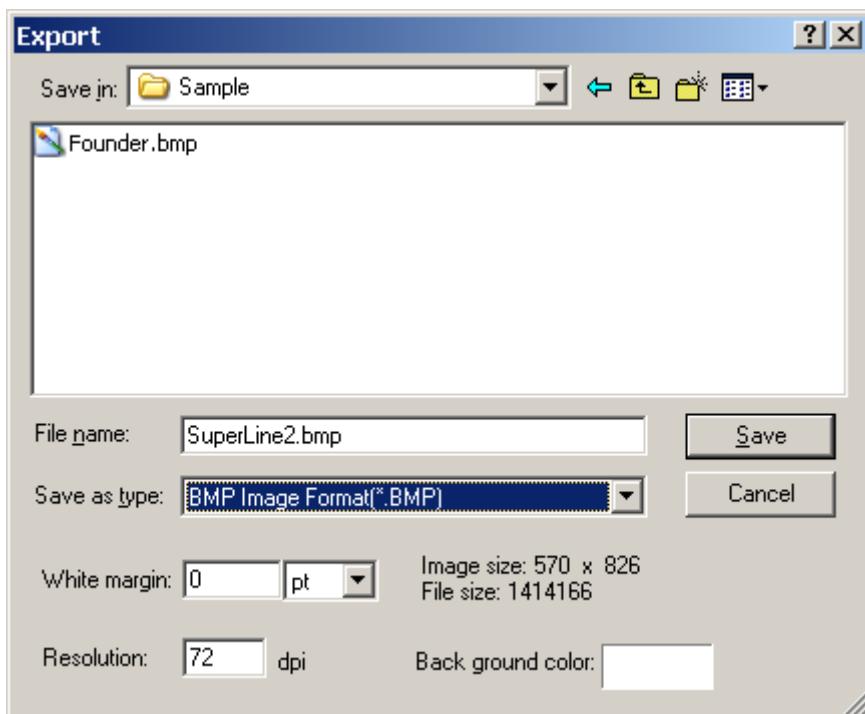


Figure 3-21

The export of a BMP image is equivalent to the export of the area (different from the page in terms of size) occupied by all of the selected objects or all objects (if no object is chosen) in the current page plus the White width around. At the time of export, SuperLine will first fill the visible area with the specified background color, and then, draw various objects inside.

Click **Save** after specifying export parameters.

3.4.3 Pattern Design

Founder SuperLine 4.60 allows you to output your elaborately designed graphic or image object in a page as a pattern file. With this capacity, you can produce three types of patterns: tile pattern, full-page pattern, and image pattern.

1) Tile pattern

The ideal graphic object for you to output as a tile pattern should have such

characteristics:

- Line width is 0.35-0.7 mm;
- The size is 30.24 pt x 30.24 pt;
- The color is black and white.

To output such a graphic object as a tile pattern, perform the steps below:

(1) Make this pattern selected, then run the **Output Pattern** command under the **File** menu to open the **Output Pattern** dialog box as shown in the following figure:

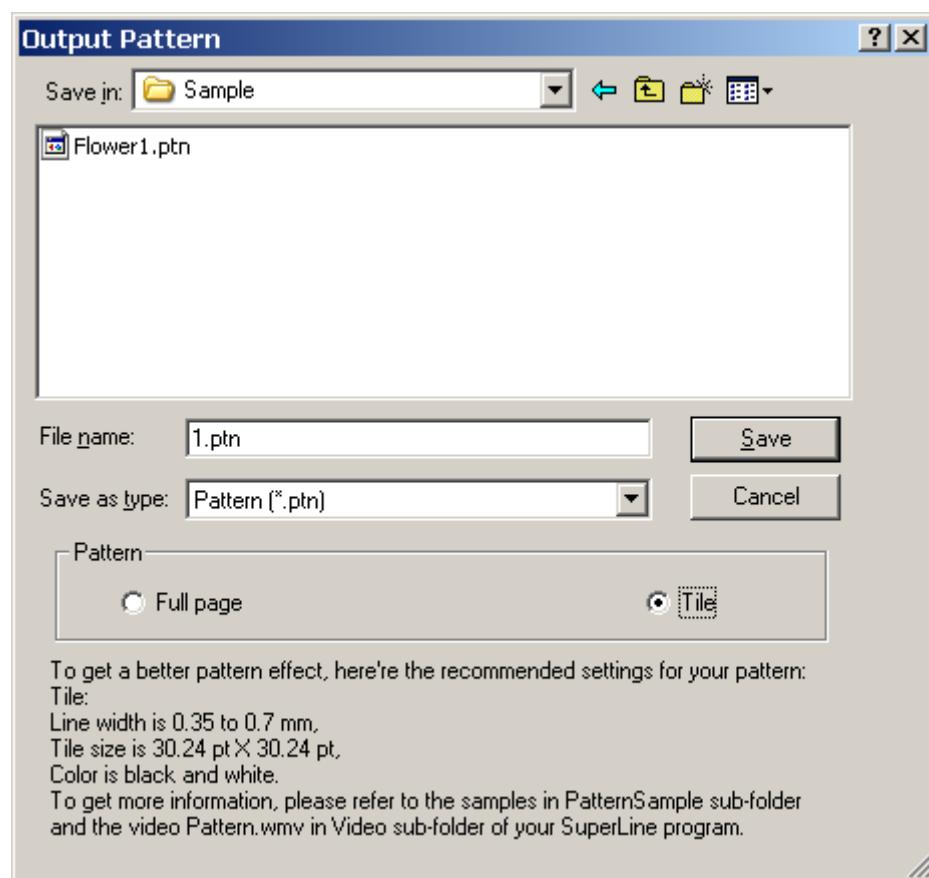


Figure 3-22

(2) Specify a file name and check the **Tile** option in this dialog box

(3) Click **Save** to output.

2) Full page pattern

The ideal graphic object for you to output as a full-page pattern should have such characteristics:

- Line width is wider than 0.35 mm;
- The size is the same as the page size;
- The color is black and white.

You can refer to the steps for outputting a tile pattern mentioned above to

perform. The difference is that you must check the **Full page** option is Step (2).

3) Image pattern

You can also import an image object in a SuperLine page as a pattern. Such image object should have the same characteristics as those for a tile pattern.

In practice, you can design such an image in other image processing software such as Adobe PhotoShop and Founder Artworld, in grayscale color mode. Then import this file into the SuperLine page, and adjust it to an appropriate size. And then follow the steps for outputting a tile pattern mentioned above to output.

3.4.4 Save as block and load block

The block refers to one or more objects accepted by the Founder SuperLine page and saved in external files. By way of blocks, the page designed previously can be utilized repeatedly or developed further. Founder SuperLine supports you to save the page object as block or load block to the current page.

- **Save as block**

To save some page objects as block:

- (1) Select the objects to be saved (one or more) in the current page;
- (2) Choose **File > Save As Block**, the **Save as block** dialog box will appear;

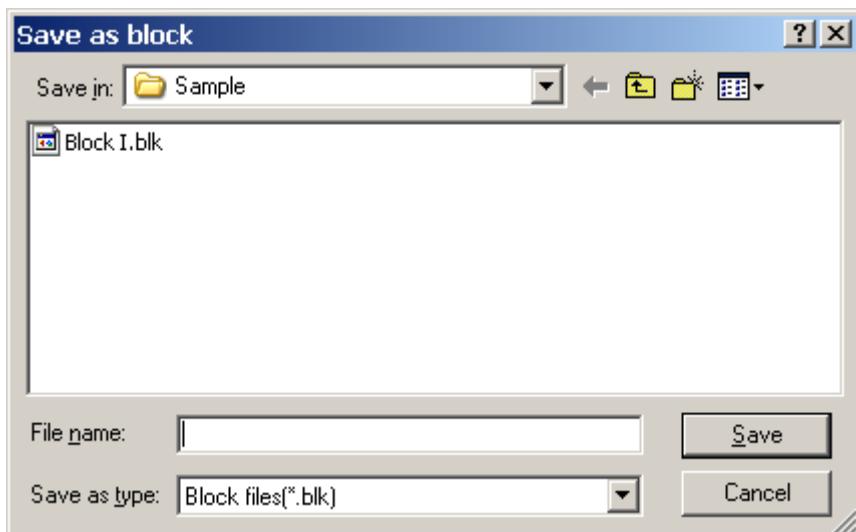


Figure 3-23

- (3) Specify the path and name of the block file (with the .BLK extension) in the dialog box and click **Save**, then the selected objects will be saved to the block file.

Notes:

- ① You can also save object(s) as block(s) by way of the **Export** dialog box. Select **File > Export** or click the **Export** icon  in the **Standard** toolbar to open the **Export** dialog box, and select the **Save as type** to "Founder SuperLine Block files (*.blk)", the object (s) you selected will be exported as

block(s).

② If the specified block file has been available, SuperLine will prompt you whether to overlay the file.

- **Load block**

To load block is to import a block file to the current page. To load block:

(1) In the current page, choose **File > Load Block**, the **Load Block** dialog box will appear;

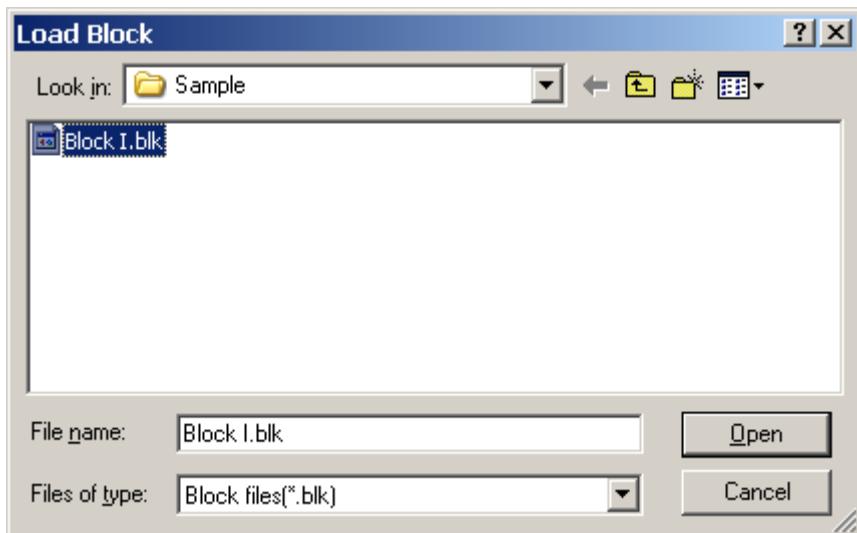


Figure 3-24

(2) Specify the path and name of the block file (with the .BLK extension) in the dialog box and click **Open**;

(3) A square with virtual frame will be available in the current page. In the center of the square is the mouse. Click somewhere in the screen, the objects in the block file will be shaped into a group object and placed in the page.

Note: You can also load block(s) by way of the **Import** dialog box. Select **File > Import** or click the **Import** icon  in the **Standard** toolbar to open the **Import** dialog box, and select the **Files of type** to "Block File (*.blk)", the block(s) you selected will be loaded.

3.4.5 Print

Founder SuperLine allows you to print the designed page. Before printing, you can also preview print effects and set the related print parameters.

- **Print setup**

To set print parameters before printing, choose **File > Print Setup**, and the **Print Setup** dialog box will appear, see the following figure.

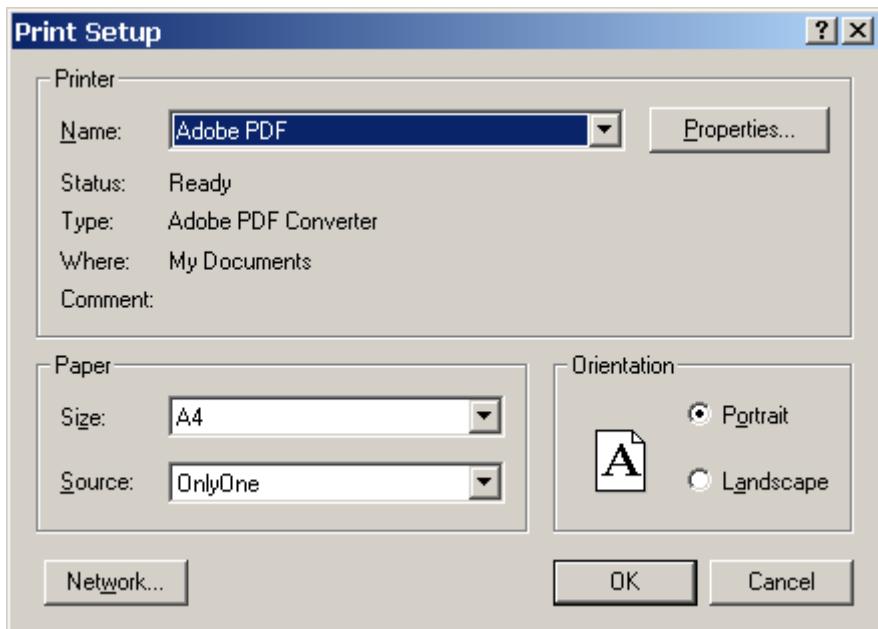


Figure 3-25

Set up printer parameters in the dialog box. But note that the parameters available in this dialog box depend on the specific printer driver.

- **Print preview**

To preview print effects before printing, choose **File > Print Preview** and an independent preview window appears;

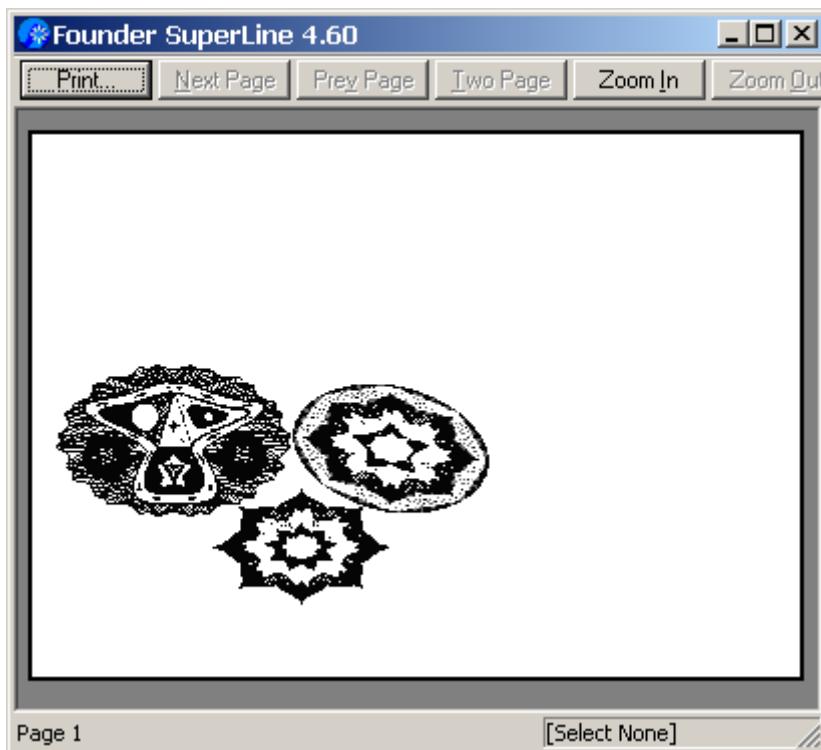


Figure 3-26

You can zoom in/out preview scale to check contents integrity. The parameters available in the **Print** dialog box depend on the specific printer driver.

- **Print**

You can follow the procedures below to print:

(1) Choose **File > Print** to open the **Print** dialog box shown as in the following figure:

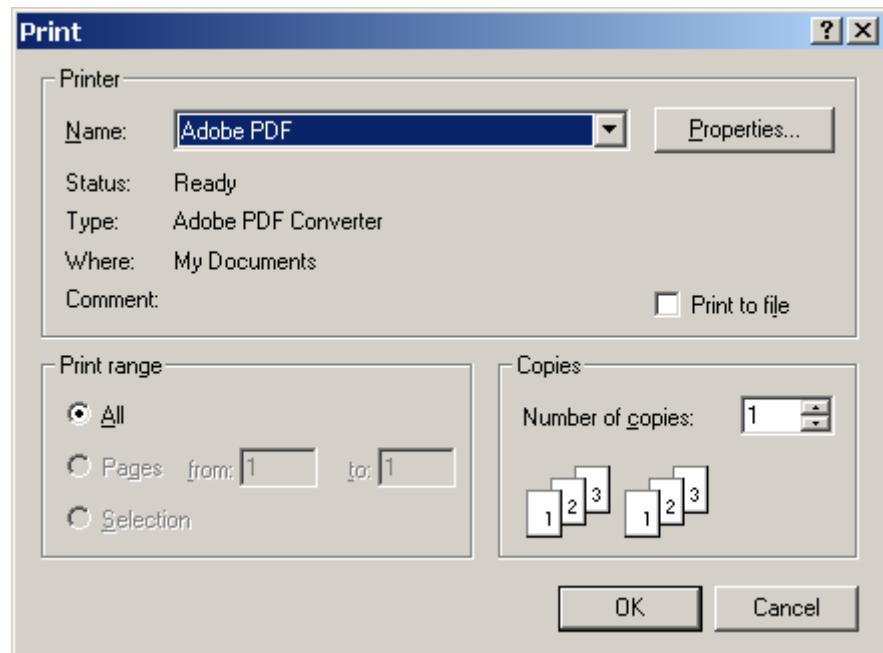


Figure 3-27

(2) Set print parameters in the dialog box. Select the specific printer (default printer of the system by default) in the **Printer** field. By checking the **Print to file**, the print effect will be saved as a file. Clicking the **Properties** button will pop up the settings corresponding to the chosen printer. In the **Copies** field, you may select the number of copies at one time;

(3) Upon the completion of the setup, click **OK** in the **Print** dialog box to start the print run. In case the **Print to file** is selected, the **File** dialog box will pop up, allowing the user to specify file path and name.

Note: *If some layers are specified as not exportable in the layer manager (i.e., the printer icon in the layer manager is gray), then it is impossible to print the objects of this layer in the page.*

3.4.6 Undo and redo operations

As the mis-operation is unavoidable in the course of page design, Founder SuperLine offers undo and redo functions, allowing the use to undo or redo operations. And furthermore, Founder SuperLine allows the user to undo operations for many times to restore a page as it was before multiple operations.

The user controls the number of undo steps. The undo levels are set up in the

Parameter Setup dialog box (refer to Section 7.5). If a user wishes to cancel an undo operation just finished and restore to the status before the undo operation, he or she may use the redo function.

Note: *The more undo levels, the more undo steps, resulting in increased occupation of system resources for saving the undo status. The operating efficiency of the system will decrease when such occupation increases to a certain degree. Consequently, the user should set up undo levels appropriate for their demands.*

- **Undo**

Click **Edit > Undo** xx (xx refers to the name of a recent operation or null) or click the **Undo** icon  in the **Standard** toolbar to undo a recent operation.

In case there is not any operation to undo, the **Undo** command will become gray. For example, create a graphic object and select **Edit > Undo Create** command, then the graphic object just created will disappear.

- **Redo**

Click **Edit > Redo** or click the **Redo** icon  in the **Standard** toolbar to redo a recent operation. In case there is not any operation to redo or the last operation is one that cannot be undone, the **Redo** command will become gray. For example, suppose we just undid the creation command executed. To restore the creation result, select **Edit > Redo Create** command, then the graphic object will appear once again.

3.5 Operation Tips

3.5.1 The Ctrl key

The **Select tool**  will appear, whichever drawing tool you currently select, by pressing the **Ctrl** key, while the release of the **Ctrl** key will restore the original tool.

3.5.2 The Space key

The **Hand Tool**  will appear, whichever drawing tool you currently select, by pressing the **space** key, while the release of the **Space** key will restore the original tool.

3.5.3 The Right-click menu

Right-click in the drawing area will pop up the shortcut menu that contains the most commonly used commands to facilitate your operations. Depending on the

object selected, they will be different. However, the universal menu commands include:

Undo, Redo, Group, Ungroup, Rotate, Arrange, Open Curve Mirror, Convert to Curve and etc.

Right-click in any of the toolbars will also pop up a shortcut menu that contains commands for hiding/displaying the toolbars, property windows, grid and guides, as well as commands for snapping objects.

3.6 Get help information

Founder SuperLine provides you with complete help information for reference. This help information can be accessed by selecting **Help > Topics**.

3.7 The first example for quick start

- SuperLine Envelope Distort

In this section, we will provide you a brief introduction to how to use Founder SuperLine, with a specific example, Develop Distort. The effect of this function is shown as in the following figure.

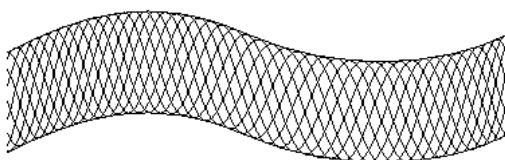


Figure 3-28

You can realize this effect by performing the steps below:

- (1) Select **File > New**, or press shortcut keys **Ctrl+N**, or click the **New** icon  in the **Standard** toolbar to open the **Page Setup** dialog box. Keep the default settings and click **OK**, a new page document is created;
- (2) Generate a Bezier curve on the page with the **Pen** tool , and select the Bezier curve with the **Select** tool , as shown in the figure below;



Figure 3-29

- (3) Copy and Paste the selected curve (pressing **Ctrl+C** and **Ctrl+V**) and arrange the two curves as shown in the figure below;



Figure 3-30

(4) Select the two Bezier curves simultaneously with the **Select** tool , as shown in the figure below;

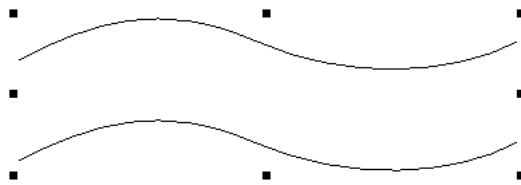


Figure 3-31

(5) Group the two selected curves under one group with the **Group** tool ;

(6) Click the **Sine Curve** tool  and set parameters in the pop-up dialog box, as shown in the following figure. Click **OK**. Now, the cursor becomes a black horizontal arrow. Click in the page and a group of sine curves will be generated.

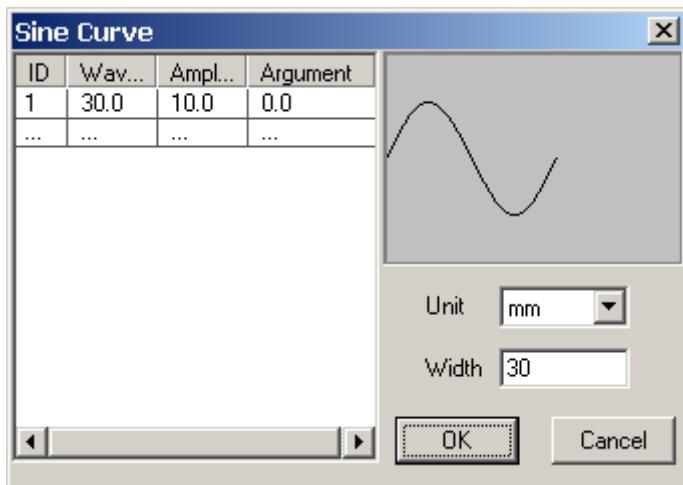


Figure 3-32

Note: Refer to Section 4.3.7 for details concerning the parameter settings of the **Sine Curve** tool.

(7) Select sine curves with the **Select** tool , as shown in the figure below;

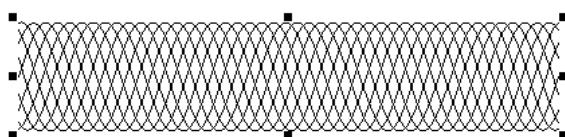


Figure 3-33

(8) Select **Effect > Envelope Distort**, the **Envelope Distort** window will pop up, shown as follows;

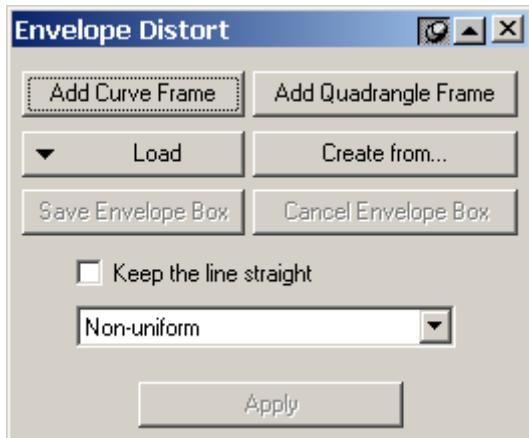


Figure 3-34

(9) Click **Create from** and the cursor now becomes a black horizontal arrow;

(10) Move the cursor to the curve group created initially and click. Now, the **Apply** button of the **Envelope Distort** window is activated;

(11) Click the **Apply** button, leading to the final operation result, as is shown in the following figure.

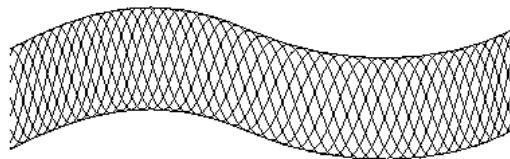


Figure 3-35

Chapter 4 Draw Graphics, Input Text and Images

The object is the cornerstone on which Founder SuperLine is based. This chapter describes these objects and their generation methods, such as how to draw graphics, input text and input images. This chapter is the first step leading to a good command of Founder SuperLine.

4.1 *Objects*

In Founder SuperLine's page, the most fundamental unit is the object. A rectangle, a portion of curve, a group of text and an image are all objects. The basic objects can be processed by Founder SuperLine include graphics, images and text.

4.1.1 Graphics

There is a great conceptual difference between graphics and images. A graphic is a geometric figure described by a group of coordinates or functions. In addition to its geometry properties (such as circles, rectangles and curves), each graphics also has outline and fill properties. Specifically, the outline properties determine the availability, thickness and color of the graphic's border line, while the fill properties the availability and color of fill.

A graphic is independent of the resolution, i.e., you can zoom it to any size and print it at any resolution without missing any details or definition.

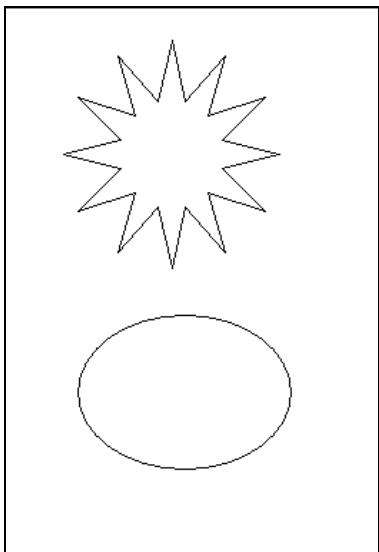


Figure 4-1

4.1.2 Images

Images are common in our daily life, while here, we refer to the digital images processed in a PC, which are also known as bitmap images. A digital image consists of a number of basic elements known as pixel elements. Pixel elements array regularly in rows and columns to form pixel element matrix. The row number of a graphic's pixel is called its height, while the column number its width. Each pixel of the graphic is assigned a specific position and color value. A pixel's position is known as its coordinates, expressed by the number of row and column of the pixel. For example, the coordinates of the pixel in the 5th row and 3rd column of an image are (3,5). The pixel value indicates the image's changes in color and brightness. While processing an image, Founder SuperLine virtually processes its pixel elements. In the anti-counterfeit printing field, images are generally not placed in the design page. Actually, images, subject to some special operations (such as relief, refraction and outline pick-up), are converted into lines (graphics) for the purpose of anti-counterfeit. Of course, the user may place images in the page directly. In this case, the definition of a graphic depends on its resolution and geometrical dimensions.



Figure 4-2

4.1.3 Text

All of us are quite familiar with text. Founder SuperLine is capable of processing both Chinese and English. The user may input text directly in the page and change text's size, font, color or other properties. Like graphics, text is independent of the equipment's resolution as well. You can zoom text to any size and print them at any resolution without missing any details or definition. Text can be converted to graphics to enable even complex originality. The text also constitutes an important part of the anti-counterfeit design.



Figure 4-3

4.1.4 Composite objects

In addition to the three basic objects above, there are also other types of composite objects made available by Founder SuperLine combining multiple objects, such as group object and clip object.

More than two objects will constitute a group object, in which, each component maintains its properties and has a fixed relative position. It is possible to move, rotate and mirror these components or change other properties simultaneously. A group object, together with other objects, can form another group object, i.e., the group object can be embedded.

An object can be clipped by a graphic object to produce a clip mask object. The clip object maintains its properties, what visible is only the part inside the graphic object. Like a group object, the clip object may also be embedded. As a rule, the purpose of crop is to eliminate the part that is unnecessary to be visible.



Figure 4-4

The user may also pick up the clip object from the clip mask object for re-editing.

Founder SuperLine processes the five types of objects mentioned hereinabove. As a matter of fact, an EPS file can be imported to Founder SuperLine's page and encapsulated to form an EPS object, which is also a kind of object processed by Founder SuperLine. It is rarely used. For information about the import of EPS files, refer to section 3.4.2.

4.2 Create, select, move and delete objects

Creating, selecting, moving and deleting objects are basic operations of Founder SuperLine.

4.2.1 Create

Founder SuperLine offers a variety of means to facilitate the user to create different types of objects. Any shape of graphic objects, such as straight line segment, rectangles (including square, rectangle, convex rectangle and concave rectangle), ellipses (including circle and ellipse), polygons (including polygon, star, star-like polygon), spirals, random curves and sine curves, can be created by the use of the tools in the **Graph** toolbar and mouse operations. With the **Text** tool in the **Graph** toolbar, you can create corresponding text objects and input text. With the **File > Import** command, it is possible to import graphic objects to Founder SuperLine's page to create corresponding images. Refer to the subsequent contents for the specific methods for creating objects. Especially, the user may use the **Pencil** tool and **Pen** tool in the **Graph** toolbar to create lines straight line by straight line or curve by curve. A case in point is to draw irregular shapes or to sign one's name.

4.2.2 Select

To move, zoom, copy or reshape an object in the page, the first step necessary is to select the object to make it the current object. All operations are oriented to the current object (the selected object).

● Statuses of a selected object

In Founder SuperLine, a selected object has two statuses, i.e., Selection Status I and Selection Status II, as are shown in the figures below.

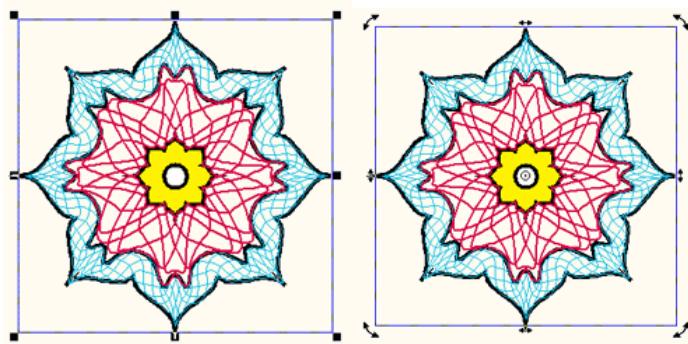


Figure 4-5

For the Selection Status I, there are eight small black squares (known as handles) at the four corners of the frame line and in the centers of the four sides. In Status I, you may move the object and change object size with your mouse.

For the Selection Status II, there are four rotate icons like  at the four corners of the frame line and four skew icons like  in the centers of the four sides. In Status II, you may move, rotate, skew the object and change object center with your mouse.

- **Selection methods**

Generally, the **Select** tool plus mouse operations are used to select an object.

➤ Select an object to make it in the Selection Status I, to do this:

- (1) If the object is not filled, first select the **Select** tool in the **Graph** toolbar and then click the edge of the object;

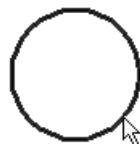


Figure 4-6

- (2) If the object has been filled or the object is text and image, first select the **Select** tool in the **Graph** toolbar and then click the inside of the object;

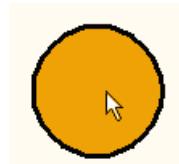


Figure 4-7

- (3) Select the **Select** tool in the **Graph** toolbar and draw a rectangular virtual frame in the blank area of the page. You may select all objects

inside the rectangle;

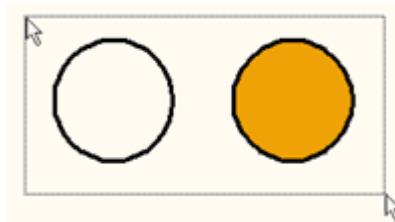


Figure 4-8

- (4) Select the **Select** tool in the **Graph** toolbar and click in the blank area of page without selecting any object;
- (5) Choose **Edit > Select All** to select all objects in the page.

Notes:

- ① *In case two objects are overlapped, press the **Ctrl** key and click the overlapped area to select one of them alternatively.*
- ② *When one object has been selected, press the **Shift** key and click another object to select both at the same time. While pressing the **Shift** key, click of a group of objects selected to deselect this object.*
- ③ *Press the **Ctrl** key and the mouse will become the shape of the **Select** tool, which is equivalent to the selection of the **Select** tool. The original tool will be restored when the **Ctrl** key is released (whenever the **Select** tool is mentioned hereafter, we will use this approach).*

- Select an object to make it in the Selection Status II, to do this:
 - (1) Select an object to make it in the Selection Status I;
 - (2) If the object is not filled, select the **Select** tool in the **Graph** toolbar and click the edge of the object. If the object has been filled or the object is text and image, click the inside of the object;
 - (3) The rotate and skew icons (and) will be available in the frame of the object.

4.2.3 Move an object

A most common operation is to move an object, which can be achieved by the use of the **Select** tool in the **Graph** toolbar, keyboard or the **Object > Transform > Position** command. With the menu or keyboard, you can control precisely object position.

- **Use the Select tool**

Procedures:

- (1) Choose the **Select** tool from the **Graph** toolbar;

(2) Select the object to be moved in the page to make it in the Selection Status I or II;

(3) Click and drag at the edge (for the unfilled Founder SuperLine object) or inside (for the filled object or text and image), the object will be moved. Release the mouse at the appropriate position.

- **Use the keyboard**

Procedures:

(1) Select the object to be moved in the page to make it in the **Selection Status I or II**;

(2) Press the keyboard's four direction keys to move the object (the moving direction depends on the direction key. The moving distance for each keystroke depends on the **Keyboard Increment** parameters in the **Options** dialog box). Press the **Shift** key while holding a direction key, the moving distance for each keystroke will be five times of the original moving distance.

- **Apply the Object > Transform > Position command**

Procedures:

(1) Select the object to be moved in the page to make it in the Selection Status I or II;

(2) Choose the **Object > Transform > Position** command and the **Object Position** dialog box will now appear;

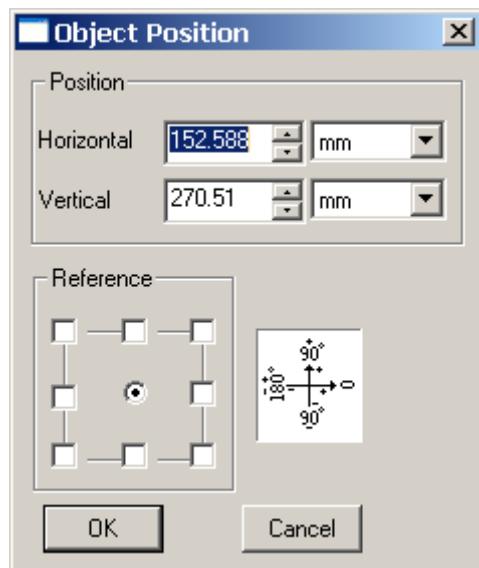


Figure 4-9

(3) Input parameters in the **Position** field of the dialog box and click **OK**, then the object will be moved;

In the **Object Position** dialog box, the values in the **Position** field determine

the position of the object reference point, while the **Horizontal** and **Vertical** options determine the reference points' horizontal and vertical positions, respectively. Click **OK** and the object's reference point will be moved to the specified position.

The parameters in the **Reference** box determine the object reference point. The selection of one corner locates the object reference point at a corner of the object frame. The selection of one side locates the object reference point in the center of a side of the object frame. The selection of the center point locates the object reference point in the center of the object. The value in the **Position** field changes with the reference point.

Note: *In case more than one object is selected, their relative positions remain unchanged.*

● Use the Object Panel

The **Object Panel**, an indispensable tool for page design, is capable of displaying the object currently selected, changing the object's size and position and mirroring the selected object.

When an object is selected, the **Object Panel** will display the object's position. Changing its position can move the object.

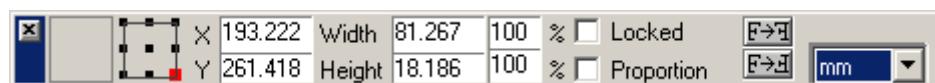


Figure 4-10

4.2.4 Delete an object

Founder SuperLine features a convenient means of deleting an object, as given below:

- (1) Select the object to be deleted to make it in one of the two selection status;
- (2) Select **Edit > Delete** (shortcut key: **Del**) or **Edit > Cut** (the difference between the two methods: the latter changes the clipboard. In this case, this object can be copied by selecting **Edit > Paste**).

Note: *If a user operates incorrectly, such as deletes incorrectly or fills incorrect color, he or she may undo the incorrect operation by selecting **Edit > Undo** to return to the previous status. Founder SuperLine allows multiple undoes. The undo levels are determined by the **Undo Steps** parameter in the **Edit > Options** pop-up dialog box.*

4.3 Draw basic graphic objects

Founder SuperLine offers a variety of means to facilitate the user to create different types of objects. Any shape of graphic objects, such as straight line segments, rectangles (including square, rectangle, convex rectangle and concave rectangle), ellipses (including circle and ellipse), polygons (including polygon, star, star-like polygon), spirals and sine curves, can be created by the use of the tools in the **Graph** toolbar and mouse operations.

Drawing a graphic is equal to creating a new object. It is worthy of noting that a newly created object will make the object originally selected lose its focus, while the new object itself will be in focus. As a result, if you have made a complex multiple selections, you'd better group them before creating a new object or you'll have to take time to make selections once again after creation of the new object.

4.3.1 Pen tool

With the **Pen** tool  in the **Graph** toolbar, you can draw straight lines, continuous zigzags or Bezier curves in the page.

- **Draw straight lines or continuous zigzags**

- (1) Choose the **Pen** tool  in the **Graph** toolbar;
- (2) Click in the page to place the beginning point of the line, move the pointer and click to place the ending point of the line. A straight-line segment joins the two points. Click continuously in different positions of the page, you will get continuous straight-line segments that form a zigzag;
- (3) When placed to the beginning point, the mouse will change to the **Pen** tool . Click and you will get a closed graphic;
- (4) Double-click or choose a tool other than the **Pen** tool to end the line drawing process.

Notes:

- ① *To close the zigzag, you may use the **Node Editor** tool (refer to Section 4.4).*
- ② *If you have selected **Snap to Object**, **Snap to Grid** or **Snap to Guides**, then you may snap the line's beginning and ending points to the appropriate positions and control line directions to draw horizontal, vertical and 45° lines. For the setup of snap modes, refer to Section 7.2. Press the **Shift** key to draw forcibly horizontal, vertical and 45° lines.*

- **Draw Bezier curves**

- What is the Bezier curve?

The Bezier curve, a common drawing tool, can be curves of any shape. Each segment of the Bezier curve consists of four points, in which, two terminal nodes determine the curve's beginning and ending points, while the two control points determine the curve's shape, as shown in the figure below.

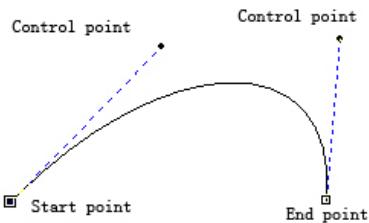


Figure 4-11

In the figure above, the two bigger black boxes indicate the curve's terminal nodes, while the two smaller black boxes control points. Moving the terminal nodes or control points will change the curve's properties.

The straight line is a special Bezier curve, in which, two control points and two terminal nodes join.

If you move the control point on the left to the beginning point and keep the angle of the line between the control point and the beginning point unchanged, the curve's curvature will decrease gradually. The closer to the beginning point, the larger the changes, see the following figure.



Figure 4-12

If you move the control point on the right to the left and keep the distance between the control point and ending point unchanged, then the curve on the right will also move gradually in the direction toward left and remain tangent to the moving straight line, as shown in the figure below.

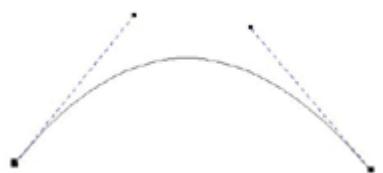


Figure 4-13

You can join multiple segments of Bezier curves or straight lines to form a path. Depending on the ways of join, the node at the joint is classified into three types: needle, smooth and symmetrical nodes. Straight lines contain only needle nodes, while curves may contain all types of nodes.

Needle node: located at the end of a straight line or curve or at the corner point of a curve. When editing the control points of a needle node, the user may change the curvature of the curve segment before them without affecting the curve segment after it.

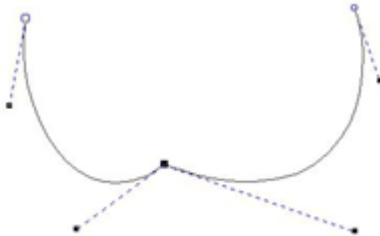


Figure 4-14

Smooth node: located at the flat portion of a curve. When editing a smooth node, the user may change the shape and direction of the two segments before and after the node. The two segments' curvature, however, will remain the same.

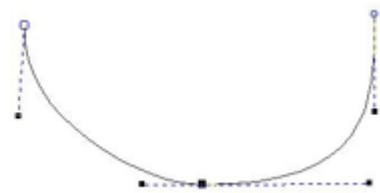


Figure 4-15

Symmetrical node: available when the two segments before and after a curve node are symmetrical. When editing a symmetrical node, the user may change the shape and direction of the two curve segments simultaneously in the same way. Symmetrical nodes are used to generate symmetrical graphics.



Figure 4-16

➤ Draw Bezier curves

With the **Pen** tool  in the **Graph** toolbar, you can draw a series of end-to-end Bezier curves in the page. To draw the Bezier curve:

- (1) Choose the **Pen** tool  in the **Graph** toolbar;
- (2) Click in the page to place the beginning point of the Bezier curve;
- (3) Move the mouse to the next position and click to place the ending point of

the Bezier curve. Drag the mouse to produce curve shape, and release the mouse, then you'll get a segment of Bezier curve (release the mouse immediately if you do not drag after click, i.e., click to produce a straight line);

(4) Following the instructions give in procedure (3), you will draw an end-to-end Bezier curve;

(5) When placed to the beginning point, the mouse will change to the **Pen** tool . Click and you will get a closed graphic;

(6) Choose a tool other than the **Pen** tool to end the curve drawing process.

Generally, the Bezier curve calls for further adjustment, i. e., reshape. Reshape is completed with the **Node Editor** tool . For details, refer to Section 4.4 Node Editor – reshape graphic objects).

4.3.2 Draw rectangles, squares, convex and concave rectangles

With the **Rectangle** tool  in the **Graph** toolbar, you can draw rectangles, convex and concave rectangles or squares in the page.

Procedures:

(1) Choose the **Rectangle** tool  in the **Graph** toolbar;

(2) Double-click the **Rectangle** tool to open the **Tool Properties** dialog box shown as follows. And determine if the rectangle can be reshaped to convex or concave. Click **OK** to exit;

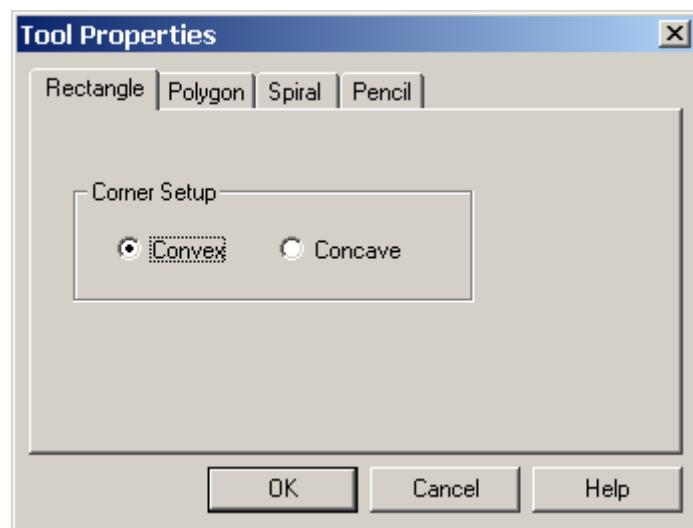


Figure 4-17

(3) Click and drag the mouse in the page to form a rectangle, and release when appropriate to produce the rectangle. If you press the **Shift** key while you are dragging the mouse, a square will be produced. And if you press the **Ctrl** key after the mouse is clicked and held, the position you just clicked will be the center of the rectangle you want to draw, and then you can draw the rectangle

centered on this position by dragging the mouse (keep the **Ctrl** key pressed).

(4) If a convex or concave rectangle is needed, you can use the **Node Editor** tool  to adjust the convex or concave angle.

Note: If you have selected **Snap to Object**, **Snap to Grid** or **Snap to Guides**, then you may snap the rectangle's apexes and center to the appropriate positions to draw a rectangle in appropriate dimensions and position.

When a rectangle or square is produced, the **Node Editor** tool  in the **Graph** toolbar will usually be used to adjust its convex or concave angle.

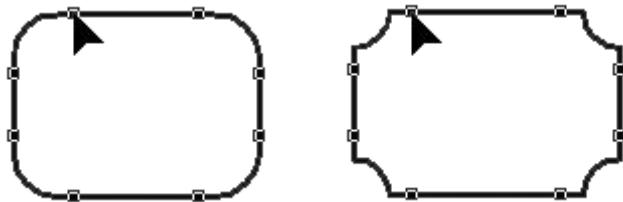


Figure 4-18

Procedures:

- (1) Choose the **Node Editor** tool  in the **Graph** toolbar;
- (2) Select the rectangle; the rectangle's nodes are displayed in the form of small boxes;
- (3) Click the mouse and drag a node along one side of the rectangle, you may see the rectangle's concave or convex angle changes accordingly. Release the mouse when you are satisfied.

Of course, for further reshape of the rectangle, you may first convert the rectangle into a curve (through the **Object > Convert to Curve** command) and then adjust its nodes. Refer to Section 4.4 for details.

4.3.3 Draw ellipse

With the **Ellipse** tool  in the **Graph** toolbar, you can draw ellipse. The major and minor axes of the ellipse so produced are horizontal and vertical. To get the ellipse of any angle, you need to rotate or skew them. For details, refer to later sections on geometric editing.

Procedures:

- (1) Choose the **Ellipse** tool 
- (2) Click and drag the mouse in the page to form an ellipse, and release when appropriate to produce the ellipse. If you press the **Shift** key while you are dragging the mouse, a circle will be produced. And if you press the **Ctrl** key after the mouse is clicked and held, the position you just clicked will be the center of the ellipse you want to draw, and then you can draw the ellipse centered on this

position by dragging the mouse (keep the **Ctrl** key pressed).

(3) To force the ellipse's two axes to be equal in length so as to produce a circle, press the **Shift** key.

Notes:

- ① *If you have selected **Snap to Object**, **Snap to Grid** or **Snap to Guides**, then you may snap the center and one semi-axe of the ellipse to the appropriate positions, and control the semi-axis' directions to draw regular or 45°skewed ellipses.*
- ② *The ellipse can not be adjusted directly with the **Node Editor** tool. For further reshape, you may first convert the ellipse into a curve (through the **Object > Convert to Curve** command) and then adjust its nodes.*

4.3.4 Draw polygons

The polygon is widely used in the anti-counterfeit design, as it, in conjunction with the Node Editor function, is capable of deriving any closed centro-symmetrical curves for use in further design.

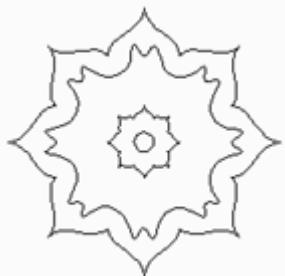


Figure 4-19

You may use the **Polygon** tool  in the **Graph** toolbar to draw a polygon.

Procedures:

- (1) Choose the **Polygon** tool  in the **Graph** toolbar;
- (2) Double-click the **Polygon** tool, define the polygon's vertex number and shape in the pop-up **Tool Properties** dialog box and then click **OK** to exit;

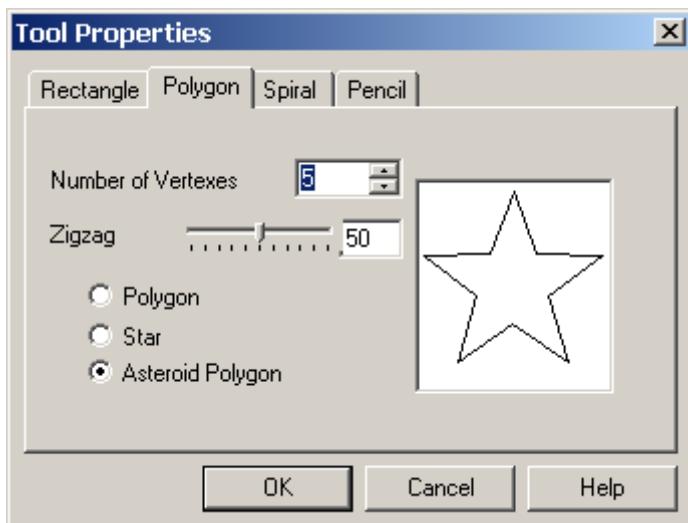


Figure 4-20

(3) Click and drag the mouse in the page to form a polygon, and release when appropriate, a polygon will be produced. If you press the **Shift** key in this course, you can produce a regular polygon.

In the polygon's **Tool Properties** dialog box, the number in the **Number of vertexes** field determines the number of the polygon's apexes. You may input a number in the box directly or press the arrow beside to change the number. The three round buttons determine the polygon's specific shape. The selection of the **Polygon** will result in a common polygon, the selection of the **Star** a pentagon-like polygon and the selection of the **Asteroid Polygon** a concave polygon with doubled apexes. When the **Asteroid Polygon** is chosen, you can change the polygon's degree of depression and projection by the **Zigzag** value (by inputting a value or dragging the slide bar). The graphic representation in the dialog box displays the shapes of the graphic with different parameters and options.

Note: If you have selected **Snap to Object**, **Snap to Grid** or **Snap to Guides**, then you may snap the polygon being drawn to an appropriate position.

When a polygon is produced, you may use the **Node Editor** tool  in the **Graph** toolbar to reshape the polygon appropriately, so as to get the desired graphical effects, such as change the polygon's degree of depression/projection and symmetry, and change it to flower shape.

Procedures:

- (1) Choose the **Node Editor** tool  in the **Graph** toolbar;
- (2) Select the polygon; the polygon's nodes are displayed in the form of small boxes;

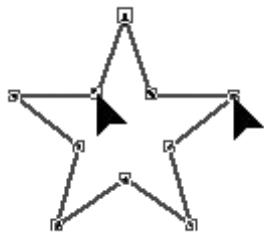


Figure 4-21

(3) Move the mouse to one node of the polygon, click, drag the mouse to the center or outside of the polygon or rotate along the polygon's outline and then release the mouse, the polygon's shape will change accordingly;

(4) For better effects, double-click the **Node Editor** tool  in the **Graph** toolbar to open the **Node Editor** dialog box shown as follows. The **Node Editor** tool provides you with such Bezier curve adjustment methods as **Add Node**, **Convert to Curve**, **Sharp Curve**, **Reduce Curve**, and so on. Refer to section 4.4 for more details.

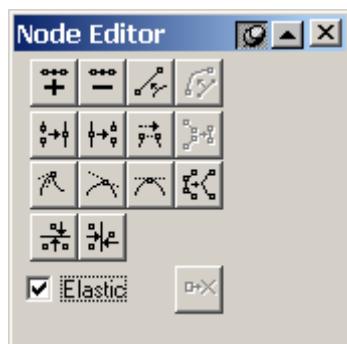


Figure 4-22

4.3.5 Draw spirals

With the **Spiral** tool  in the **Graph** toolbar, you can draw spirals in the current layer of the page. Procedures:

- (1) Choose the **Spiral** tool  in the **Graph** toolbar;
- (2) Double-click the **Spiral** tool, set up the circle number and direction of the spiral in the pop-up **Tool Properties** dialog box and then click **OK**;

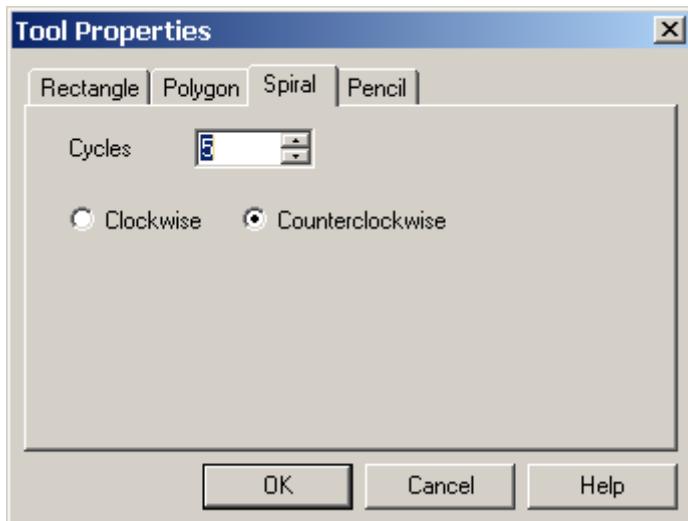


Figure 4-23

(3) Click and drag the mouse in the page to form a spiral, and release when appropriate, a spiral will be produced. If you press the **Shift** key in this course, you can a square out frame containing the spiral.

In the **Tool Properties** dialog box, the **Cycles** field determines the circle number of the spiral to be drawn, while the two round buttons determine the spiral's rotation direction. The selection of **Counterclockwise** and **Clockwise** will result in a spiral that rotates anticlockwise and clockwise respectively.

4.3.6 Freehand drawing

Using the **Pencil** tool  in the **Graph** toolbar, you can draw graphic objects of any shape by simulating the freehand drawing with a pencil. The shapes of the graphic objects are expressed by Bezier curves.

Procedures:

- (1) Choose the **Pencil** tool  in the **Graph** toolbar;
- (2) Double-click the **Pencil** tool  and set up pencil drawing **Accuracy** parameter in the pop-up **Tool Properties** dialog box, then click **OK**;

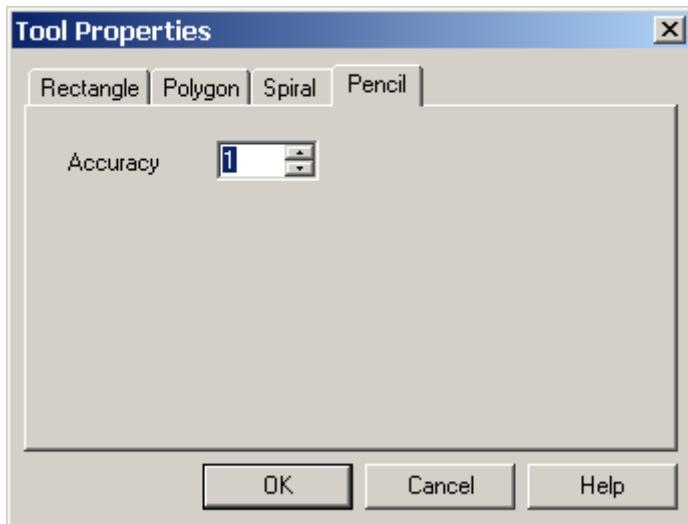


Figure 4-24

(3) Click and drag in the current page, then release the mouse. The track of the cursor is the shape of the graphic object.

In the pencil drawing **Tool Properties** dialog box, the **Accuracy** controls the precision (range from 0 to 10) of the system's follow-up of mouse slide. The smaller the value, the coarser the curve plotted (the closer to the actual mouse track) and vice versa (the further from the actual mouse track).

To reshape further the freehand curve, you may use the **Node Editor** tool . For details, refer to Section 4.4.

4.3.7 Draw sine curves

As an important tool in the anti-counterfeit design, the sine curve is capable of deriving a number of graceful curves, which are usually used to fill other graphics. The following figure is a graphic formed by sine curves. Founder SuperLine offers an easy-to-use and useful sine curve drawing tool that can draw multiple sine curves at one time.

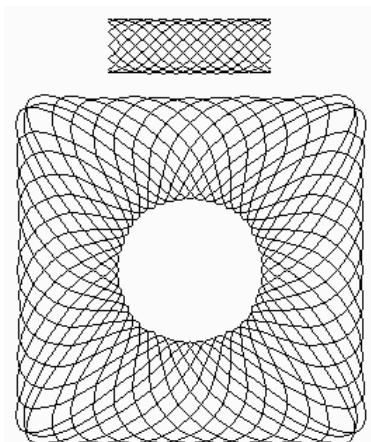


Figure 4-25

Using the **Sine Curve** tool  in the **Graph** toolbar, you can draw sine curves.

Procedures:

(1) Click the **Sine Curve** tool  in the **Graph** toolbar, and the **Sine Curve** dialog box appears;

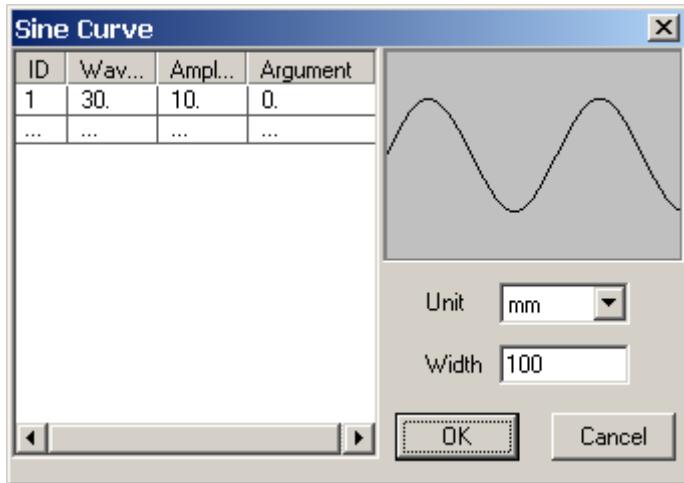


Figure 4-26

(2) Set up the sine curve's wavelength, width, amplitude and argument in the dialog box. The right of the dialog box displays the sine curve's preview. Click **OK** to exit, and the cursor becomes a large black arrow;

(3) Click in the page. The sine curve will be generated.

In the **Sine Curve** dialog box, you can set up precisely the sine curve's wavelength, width, amplitude and argument.

The unit for the width and length is defined in the **Unit** dropdown box.

Each row with parameters corresponds to a sine curve. Click a row and the corresponding sine curve in the preview becomes a blue curve. Each row has four columns corresponding to each sine curve's sequence number, wavelength, amplitude and argument (initial phase angle), respectively. The sequence number is generated automatically, while the wavelength, amplitude and argument can be inputted directly by first double-clicking in the corresponding column, inputting a number and then clicking other column to validate the number. The preview of the corresponding sine curve changes accordingly.

The argument is somewhat special. The argument value comes in two forms, i.e., X and $X*n$, where, X represents an angle value and n a natural number. The use of the second form generates at one time n curves whose argument difference is X . Inputting 45 generates a sine curve with 45° initial phase angle. Inputting $45*3$ generates three since curves whose arguments are 0° , 45° and 90° , respectively, with other parameters being the same.

Right-click a row and the shortcut menu appears. To delete the row and its corresponding curve, select **Delete**. To copy the row and its corresponding curve (in the end of the list), select **Copy**.

The preview can be zoomed. To double the preview, you can click in the preview box. To halve the preview, you can right-click in the preview box. The zoom in and zoom out are centered on the click point.

You may input the sine curve's width in the **Width** box and determine its period as well. For example, specify in the list a curve's wavelength to be 30 and the number in the **Width** box to be 45, and then the curve's period will be $45/30=1.5$.

If only one sine curve is generated, you may use the **Node Editor** tool  in the **Graph** toolbar to extend it, i.e., to increase or decrease the number of periods.

Procedures:

- (1) First generate a one-period sine curve, and then choose the **Node Editor** tool.
- (2) Select the sine curve with the mouse. Small boxes are now available to its two terminal nodes;
- (3) Drag one small box to the appropriate position and the sine curve will also extend to this position.



Figure 4-27

If multiple sine curves are generated at one time, you may first ungroup them and then extend them individually.

To further reshape a sine curve, you may first convert it into a curve and then use the **Node Editor** tool. For details, refer to the next Section.

4.4 **Node Editor – reshape graphic objects**

To reshape a graphic object is to further refine the shape of the graphic, so as to meet originality requirements. For instance: to draw a tiger, the user may start with the tiger's rough outline and then proceed to fine tune. You can use the **Node Editor** tool  in the **Graph** toolbar to reshape an object, by way of moving the curve's nodes and control points. The **Node Editor** tool enables you to reshape such graphic objects as rectangle, polygon, sine curve and any random curve.

4.4.1 **Select the target object**

To reshape an object, you must make it selected at first. The **Node Editor** tool

can select only one object at one time. The purpose of selecting an object is to select its nodes and then edit and adjust them.

Note: Selecting an object with the **Node Editor** tool is different from that described in section 4.2. You can use the **Node Editor** tool to select an object for the purpose of reshaping, but not changing the graphic's other properties (such as size and position). And using the **Node Editor** tool, you can only select individual graphic objects instead of images, text, group objects and clip objects.

To select an object and its nodes by using the **Node Editor** tool, perform as follows:

- (1) Choose the **Node Editor** tool  in the **Graph** toolbar, and click at appropriate place (e.g. the edge of the object) to select the object;
- (2) When a graphic object (other than ellipse) in the page is selected, and its adjustable nodes are displayed in the form of small boxes and the node box at the starting point is slightly bigger, you can begin to adjust the nodes;

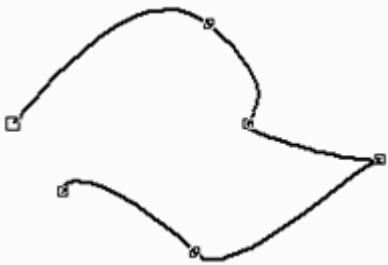


Figure 4-28

- (3) Or else, all of the objects currently selected are released (not selected). You may click the graphic object to be reshaped. Select the object, then its nodes appear and are ready for adjustment.

4.4.2 Select one or more nodes of the target object

To adjust the object's nodes, you need to select them through the **Node Editor** tool. One or more nodes can be selected simultaneously by using the **Node Editor** tool. Depending on the number of nodes selected, different reshape methods are available.

1) To select one or more nodes of a common curve, polygon, straight line or spiral:

You can use the **Node Editor** tool to select the object, and then select one or more nodes by way of:

- **Select one single node**

Move the mouse to the target node and click to select this node. The selected

node is displayed as a black square. The control points concerned are displayed as smaller black squares.

- **Select multiple nodes simultaneously**

Drag the mouse to the appropriate position and click to place one corner of the rectangle. Move to another position and release the mouse to place the opposite corner of the rectangle. All nodes of the current object inside the rectangle are selected.

- **Select multiple nodes one by one**

Select first one or more nodes and then other nodes (one or more) while holding the **Shift** key. All nodes selected are displayed as black squares.

To abandon the nodes selected, click at other nodes or in the blank area. In case multiple nodes have been selected for the moment, you may click the selected node to be abandoned while holding the **Shift** key, and then the node will be deselected.

You cannot select multiple nodes of a rectangle, polygon and sine curve. You can reshape these objects directly to maintain their symmetry.

4.4.3 Reshape rectangles

Using the **Node Editor** tool, you can reshape rectangles (including squares) by, for example, changing to convex or concave rectangles and changing convex or concave angles. Refer to section 4.3.

4.4.4 Reshape polygons

Using the **Node Editor** tool, you may also reshape polygons by, for example, changing their degree of depression/projection and symmetry. Refer to section 4.3.4.

4.4.5 Reshape sine curves

Using the **Node Editor** tool, you can extend a sine curve, i.e., change its period number and initial phase angle. Refer to Section 4.3.7.

4.4.6 Reshape random curves

The most important function of the **Node Editor** tool is to adjust nodes of common curves to reshape them by, for example, dragging curves directly with the mouse, moving nodes and control points, increasing/decreasing nodes, disjoining and merging nodes, changing node natures, converting straight lines to curves and vice versa so as All methods described in this subsection are applicable to the envelope box involved in transforming curves, straight lines and envelopes (refer to Section 8.2.4 for information on the Envelop Distort).

Three types of points are available to a Bezier curve, i.e., needle, smooth and

symmetrical nodes (refer to section 4.3.1). A straight line has only needle nodes, while a curve may include all types of nodes.

1) Node Editor window

A curve's nodes are generally adjusted in the **Node Editor** window. Double-click the **Node Editor** tool  and the **Node Editor** window appears. It is a rotate window.

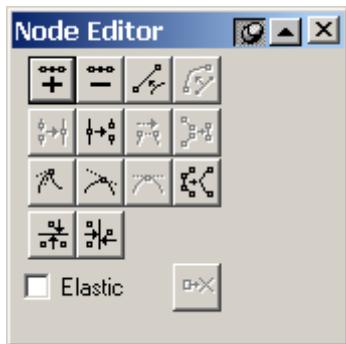


Figure 4-29

The following table lists the functions of various tool buttons in the **Node Editor** window:

Button	Name	Function
	Add Node	Add a node
	Delete Node	Delete a node
	Convert to Line Straight	Convert a curve into a straight line
	Convert to Curve	Convert a straight line into a curve
	Join	Join two terminal nodes
	Break	Break a curve at a node
	Connect	Connect two terminal nodes with a straight line
	Divide Curve	Separate a sub-path as a new object from a graphic that contains multiple sub-paths
	Sharp Curve	Transform a selected node to a needle node
	Smooth Curve	Transform a selected node to a smooth node

	Transform Curve	Transform a selected point to a symmetrical node
	Reduce Curve	Remove extra nodes from a curve
	Align Nodes Horizontally	
	Align Nodes Vertically	

Note: In some cases, some buttons in the **Node Editor** window are forbidden, indicating their unavailability in this status. The button status changes with the status of the selected node. For example, the **Delete** button is effective when a node is selected, and forbidden when no node is selected.

2) Drag curves directly using the mouse

Procedures:

- (1) Select the curve object by using the **Node Editor** tool 
- (2) Click at the edge of the curve and drag. The curve shape changes accordingly.



Figure 4-30

3) Move nodes and control points

Moving nodes and control points can change the shape of curves and objects so as to simulate object shapes precisely. It is primarily applicable to common curves, straight lines or spirals.

Nodes can be moved elastically and non-elsastically. Selecting **Elastic** in the **Node Editor** window moves nodes elastically or otherwise, non-elsastically. In the case of non-elastic move, all nodes selected are moved for the same distance, while in the case of elastic move, each node is moved for a distance proportionate to the distance between it and the base node (the node being dragged by the user) and positions of the starting/ending points remain unchanged. The whole curve extends or contracts, like elastic, as the mouse moves.

Procedures:

- (1) Select the object by using the **Node Editor** tool 

(2) Select one or more nodes you want to move. Move the mouse to any node selected. Click and drag to the appropriate position and then release the mouse. The selected node is moved and the shape of the object as a whole changes automatically;

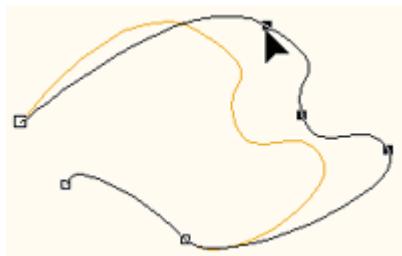


Figure 4-31

(3) Select one node and move the mouse to its control points. Click and drag to the appropriate position and then release the mouse. The curve's curvature is altered and the object's shape changes automatically. While moving a control point, if its adjacent node is a smooth or symmetrical node, then another control point of the node will move accordingly.

4) Add curve nodes

Adding nodes to an object can refine its shape. To add nodes:

- (1) Select the object by using the **Node Editor** tool;
- (2) Click at a point in the curve where a node will be added. Highlighted small squares appear at the point;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. Then click the **Add Node** button
- (4) To add multiple nodes, repeat procedure (3).

5) Delete nodes from the object

Deleting a train of dense nodes is conducive to trimming an object and smoothing inflection points along a curve. The user may select multiple nodes to delete them at one time. The position of the nodes deleted determines shape changes of the object.

Procedures:

- (1) Select the object by using the **Node Editor** tool;
- (2) Select one or more nodes to be deleted;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. Then click the **Delete Node** button

6) Convert a curve segment into a straight line

The function is briefed as the linearization, which is used to convert a curve segment (s) into a straight line (s).

Procedures:

- (1) Select the object using the **Node Editor** tool;
- (2) Select the nodes of the curve segment to be altered;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. Click the **Convert to Line Straight** button .
- (4) To alter multiple segments, you may select their nodes simultaneously.

7) Convert a straight line segment into a curve

The function is briefed as the curves, which is used to convert a straight line segment (s) into a curve (s). Since a straight line segment's control points can not be displayed and adjusted, it is sometimes necessary to curve it for further adjustment.

Procedures:

- (1) Select the object using the **Node Editor** tool;
- (2) Select the nodes of the straight line segment to be altered;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. And then click the **Convert to Curve** button .

After a straight line segment has been converted into a curve, its display remains unchanged. When the user selects points at two ends of the segment, the availability of control points indicates that it is already a curve. To alter multiple segments, you may select their points simultaneously.

8) Join Terminal nodes

This function is designed to close or join the sub-paths in a graphic (for example, join two curve segments of an object) and to replace two terminal nodes with a new point, i.e., midpoint of the two terminal nodes.

Procedures:

- (1) Select the object by using the **Node Editor** tool;
- (2) Select the two terminal nodes in an open curve or different sub-paths;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. And then click the **Join** button.

9) Break curves

This function is designed to break a curve into multiple sub-paths. The broken

curve remains to be the same object.

Procedures:

- (1) Select the object by using the **Node Editor** tool;
- (2) Select the nodes at the curve point to be broken;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. And then click the **Break** button . The curve will be broken at this point and one node becomes two.

10) Connect two terminal nodes

This function is designed to generate a straight line segment to connect the two terminal nodes selected. You may use it to close or join the sub-paths in a graphic. In case the two terminal nodes selected are the starting and ending points of an open curve, the curve will become closed. In case the two terminal nodes selected belong to different curve segments, the two curve segments will become one after the two terminal nodes are connected.

Procedures:

- (1) Select the object by using the **Node Editor** tool;
- (2) Select the two terminal nodes in an open curve or in different curves;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. And then click the **Connect** button . A straight line appears between the two nodes.

11) Divide curve

To divide a curve is to separate a sub-path from a curve object that contains multiple sub-paths, so as to make it an independent object. The **Divide Curve** functions the same as that of the **Object > Release Combination** command. The difference is that the **Divide Curve** can only separate one sub-path at one time, while the **Release Combination** is capable of making all sub-paths independent at one time.

Procedures:

- (1) Select a graphic object that contains multiple sub-paths by using the **Node Editor** tool;
- (2) Select a node of the sub-path to be divided;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. And then click the **Divide Curve** button . The sub-path will be separated out and made an independent graphic object.

12) Convert nodes to needle, smooth or symmetrical nodes

Altering node type affects object shape and the way in which the user adjusts nodes and control points.

Procedures:

- (1) Select the object by using the **Node Editor** tool;
- (2) Select one or more nodes to be altered;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. And then click the **Sharp Curve**, **Smooth Curve** or **Symmetrical Curve** button (,  or ). The node will be converted to needle, smooth or symmetrical node respectively.

13) Reduce curves automatically

To reduce a curve automatically is to delete all nodes that do not affect curve shape in order to decrease curve data. Procedures:

- (1) Select the curve object by using the **Node Editor** tool;
- (2) Select multiple nodes of the curve;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. And then click the **Reduce Node** button . All extra nodes within the range of the selected object will be deleted. Of course, if there is not any extra node, the object's node number will remain unchanged.

14) Align Nodes Horizontally

Use this button to align horizontally the multiple nodes selected.

- (1) Select the curve object by using the **Node Editor** tool;
- (2) Select multiple nodes of the curve;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. And then click the **Align Nodes Horizontally** button . The multiple nodes selected will then be aligned in the same horizontal line.

15) Align Nodes Vertically

Use this button to align vertically the multiple nodes selected.

- (1) Select the curve object using the **Node Editor** tool;
- (2) Select multiple nodes of the curve;
- (3) If the **Node Editor** window is closed, double-click the **Node Editor** tool to open it. Click the **Align Nodes Vertically** button . The multiple nodes

selected will then be aligned in the same vertical line.

4.5 Properties of a graphic object

A graphic object in Founder SuperLine has two basic properties: outline (line width and color) and internal fill color. In Founder SuperLine 4.60, the outline and fill properties are managed in the **Fill and Stroke** dialog box, as shown in the following figure. To open this dialog box, you may select the **Window > Fill and Stroke** command or use the shortcut key F8.

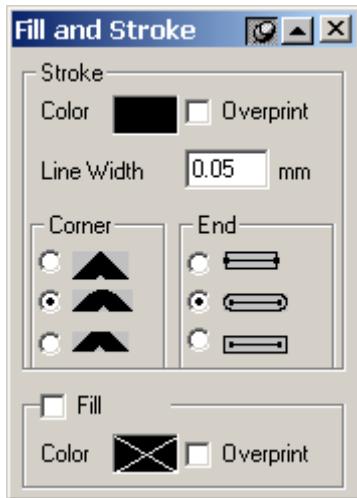


Figure 4-32

4.5.1 Set up a graphic's outline properties

The outline properties parameters in the **Fill and Stroke** dialog box include: **Color**, **Line Width**, **Corner**, **End** (the terminal nodes) and **Overprint**.

- **Color:** The **Color** parameter in the **Stroke** area determines the outline color. And that in the **Fill** area determines the internal fill color. Click the color block on their right, and you can open the **Color** dialog box, in which you define appropriate color for use. Please refer to Section 3.3.4 for details on operations in the **Color** dialog box.
- **Line Width:** It refers to outline width. You can define it by directly inputting a value.
- **Corner:** Refers to corner shape at the turn of the outline. There are three options: flat, sharp and round corners.
- **End:** refers to the way in which the end points of an open outline are drawn. Options include round, square and flat ends, which are only applicable to straight lines and open curves. Generally, when the outline is relatively thinner, it is difficult to tell the difference between the three types of ends. When the outline is relatively thicker, there exists

significant difference. The user may make the selection as the case may be.

- **Overprint:** when two colors overlap, the color above will cover the one below if the **Overprint** check box is not selected. Otherwise, color calculation will be made with the two colors. For example, overprinting red and blue will result in yellow (the **Overprint** in the **Fill** area has the same implication).

To set up a target object's outline properties, please select the object first. You can select one graphic object, or multiple objects (including at least a graphic object or clip object), or a clip object, or group object. Then open the **Fill and Stroke** dialog box to define in specific.

4.5.2 Set up the fill color inside a graphic

The inside of a graphic can be filled with a color or nothing. Two methods are available to set up fill properties.

1) Use the Edit menu item

- (1) Select one or more objects;
- (2) Click **Edit > Fill Color** and define a color in the pop-up **Color** dialog box. Click **OK**. The selected graphic object is filled with the selected color;
- (3) Click **Edit > Release Filling Color** and the object has no fill.

2) Use the Fill and Stroke dialog box

- (1) Select one or more objects;
- (2) To fill the selected object with a color specified in the color box below, check the **Fill** box. You may click the color box to select a different color;
- (3) To cancel the fill, uncheck the **Fill** box.

Note: In procedure (1), when selecting the object, you may select one graphic object, multiple objects (including at least a graphic object or clip object), a clip object and group object.

4.5.3 Set up the default properties of a graphic object

In Founder SuperLine, you can set up default outline and fill properties for a new graphic object. The default properties of a new graphic, when created, will appear first, such as outline availability, outline width and color, fill availability and color.

To set up default properties: when not any object is selected, set up various settings in the **Fill and Stroke** dialog box. These settings will become default properties.

4.5.4 Convert to black white mode

You can change the outline and fill colors of an object to black. To do this, select the object first, then click **Edit > Convert to black white mode** to open the **Color** dialog box. And then define a black color. The change will take effect.

4.5.5 Convert to same outline or fill color

In addition to that you can change the outline or fill color of a single object, Founder SuperLine also allows you to change the outline or fill colors of all objects in the page to a single color. This can be implemented by the **Edit the same outline color** and **Edit same fill color** commands under the **Edit** menu. The former allows you to convert the outline colors, and the latter the fill colors.

4.6 Input text and alter text properties

As an important element in the anti-counterfeit design as well, text, more often than not, is found in general anti-counterfeit certificates and cards. How does Founder SuperLine to process text?

At the beginning of this chapter, we have made it clear that text is also a class of object in Founder SuperLine. A page may contain multiple text objects. The text issue involves the following:

- 1) Properties of the current text;
- 2) How to create text objects, input and edit text;
- 3) Text-load automatic;
- 4) Text selection and operation positioning;
- 5) Text edition;
- 6) How to alter text properties (color, font, font size, bolder, italic, superscript and subscript).

Select **View > Tool Bar > Text**, the **Text** toolbar will be displayed in the main interface, as shown in the following figure. This useful toolbar for text typeset cannot only display such properties as current font and font size, but also can be used to change these text properties.

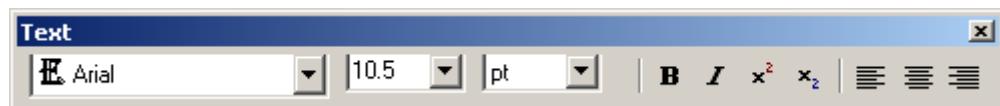


Figure 4-33

4.6.1 Current text properties

Founder SuperLine can process the following text properties: text color, font,

font size, bolder, italic, superscript/subscript, word space, line space and space definition, etc. Except color (black by default), word space, line space and space definition, other properties are all displayed in the **Text** toolbar, i.e., the properties currently displayed in the **Text** toolbar are the current text properties, which are used when you create new text objects or input text.

All the current text properties can be displayed in the **Character Attributes** dialog box, which can be opened by selecting **Edit > Character Attributes**, or by double-clicking the **Text** tool  in the **Graph** toolbar.

Note: Available unit options for text include *pt*, *mm*, *cm*, *inch*, *degree* and *PICA*. Please select the unit as needed.

4.6.2 Create text objects, input and edit text

To process text in the page, you should first create a text object in the page, and then input text in the object.

To create a text object and input text:

- (1) Click the **Text** tool  in the **Graph** toolbar;
- (2) In the **Text** toolbar's font list box, select the desired font, and in the font size list box, select or input the desired font size (press **Enter** after inputting the font size). And then place the mouse inside the page and the cursor becomes the text cursor.

When you select a font in the font list box, a font preview automatically pops up on the right, displaying simultaneously the style of the font currently selected, facilitating you to select a suitable option.

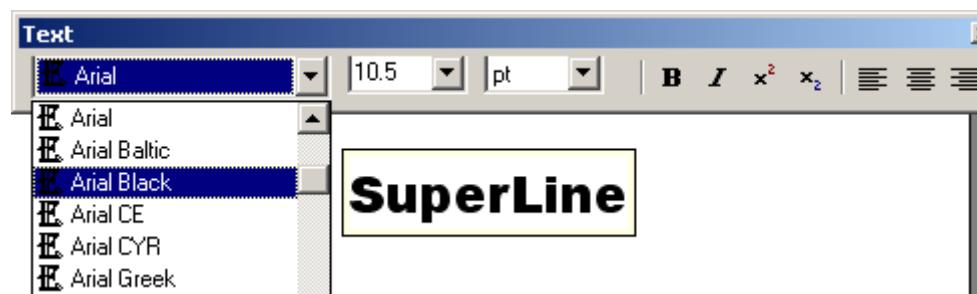


Figure 4-34

- (3) Click in the page. A flashing cursor of the column bar shape appears, indicating the position in which you can now input text;
- (4) Type in text using an appropriate input method. Text is virtually the text object generated in the position of the cursor. With the increase of inputs, the cursor moves accordingly. In the course of input, you may press the **Enter** key to enter a new line or use the **Backspace** key to delete characters. You may also click in the words already available to move the cursor so as to insert text;

(5) When the necessary text input is completed, click the **Select** tool in the **Graph** toolbar to end the whole process of object creation. The text just inputted is generally black.

4.6.3 Text-load automatic

The text-load automatic refers to import existing TXT files to the SuperLine page to form a new text object. The text-load automatic is an effective way to make use of existing files. To enable the text-load automatic:

- (1) Select **File > Import** or click the **Import** icon  in the **Standard** toolbar to open the **Import** dialog box. Choose the name of a TXT file and click **OK**;
- (2) A new text object is created and the text in the TXT file is all input automatically. The text object is aligned with the lower left corner of the page. And the text object's font is the same as the current font. The font size is always 10.5 pound and the font weight is normal.

4.6.4 Text selection and operation Positioning

To adjust the text object as a whole (for example, alter the font, font size and color of the text as a whole in the object, copy, delete, position, zoom, rotate, shear and mirror the object as a whole), you first have to select the text object. The method of selecting the text object is the same as selecting the common object. There are two selection states as well. Refer to Section 4.2 for details.

To edit some words in the text object (such as change font, font size, color, font weight, become italic, copy/ cut/delete text), you have to enter the text editing status and then select the target text in the object, which is what we call Text Selection. The text selection can only be made in the text editing status. The selected text is highlighted. In the figure below, the highlighted text is selected, i.e., it is the operation target.

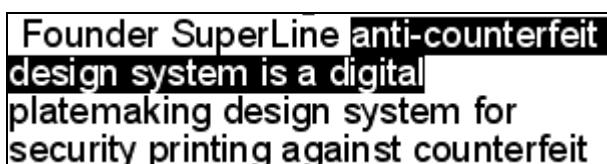


Figure 4-35

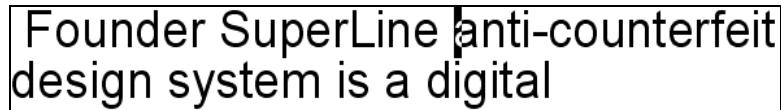
A text object usually contains multiple words. For some operations, it is necessary to determine which words to operate on or begin with. For example, to insert words and copy a few words in the object, you need to determine operation position, i.e., positioning of text operation.

1) Enter the text editing status

To enter the text editing status:

- (1) Click the **Text** tool  in the **Graph** toolbar;
- (2) Click in the page. A flashing text cursor appears. Now, you can edit text

(create text objects), or click the target text object in the page. The text cursor appears. The text object is now in the text editing status, allowing other operations (such as select words).



Founder SuperLine anti-counterfeit design system is a digital

Figure 4-36

Note: Whether or not enter the text editing status does not affect the object currently selected, i.e., the text object currently edited is not necessarily the object currently selected.

2) Text selection methods

There are quite a few text selection methods, but first you have to enter the text editing status.

- **Drag by the mouse**

To drag by the mouse is to select text directly using the mouse.

Procedures:

- (1) Enable the target text object to enter the text editing status or click the **Text** tool in the **Graph** toolbar directly;
- (2) Move the mouse to the start point of the text selected. Click and move the mouse to the end point of the selected text. Release the mouse. The text within the drag area is selected and highlighted.

- **Use the keyboard**

Founder SuperLine also allows you to select text using the keyboard.

Procedures:

- (1) Enable the target text object to enter the text editing status;
- (2) Move the cursor to the start point of the selected text and click;
- (3) Press the **Shift** key;
- (4) Press the four direction keys repeatedly to move the cursor to the end point of the selected text, where:

Pressing the “←” key moves the cursor leftward by one letter, the “→” key rightward by one letter, the “↑” key upward by one line and the “↓” key downward by one line. Pressing the **Home** key moves the cursor to the start of the line and the **End** key to the end of the line.

- (5) When assured you are right, release the **Shift** key. The text covered by the selection will be highlighted.

3) Positioning text operation

For various text operations, you first need to select the starting position, i.e., positioning. For example, to select the text in the object, you need to determine the starting point of the selection range. Founder SuperLine offers two positioning methods.

- **Use the mouse**

Procedures:

- (1) Enable the target text object to enter the text editing status;
- (2) Move the cursor to the desired text position and click.

- **Use the keyboard**

Procedures:

- (1) Enable the target text object to enter the text editing status;
- (2) Move the cursor to the desired text position and click;
- (3) Press the related keyboard keys repeatedly to move the cursor to the desired text position, where:

Pressing the “←” key moves the cursor leftward by one letter, the “→” key rightward by one letter, the “↑” key upward by one line and the “↓” key downward by one line. Pressing the **Home** key moves the cursor to the start of the line and the **End** key to the end of the line.

4.6.5 Edit text

To edit text is to alter the text in the text object, which is possible only when the object is in the text editing status. After text editing, the text in the object will rearrange itself.

1) Type in text

For the methods of typing in text when the text object has not been created, refer to Section 4.6.2.

To type in other words in the appropriate position in a text object with text:

- (1) Enable the target text object to enter the text editing status;
- (2) Use the mouse or keyboard to place the position for text input;
- (3) Type in the desired text with an appropriate input method. The text will start from the position so determined.

2) Copy, cut and paste text

It is a common practice to copy and paste text in or between text objects.

Procedures:

- (1) Select the text to be copied or cut;

- (2) To copy, select **Edit > Copy** or press the Ctrl+C shortcut key. To cut, select **Edit > Cut** or press the Ctrl+X shortcut key;
- (3) Enable the target object to enter the text editing status and position the text pasting;
- (4) Click **Edit > Paste** or press the Ctrl+V shortcut key. The text will be inserted.

Notes:

- ① Using of the **Edit > Copy** command has no effect on the text in the original object, while using the **Edit > Cut** command deletes the selected text in the original object.*
- ② If the copy, cut and paste operations are completed in the same object, you can omit procedure (3).*
- ③ After text insertion, the text in the text object will rearrange itself automatically.*

3) Delete text

A number of methods are available for deleting part of the text in the text object.

- **Use the Backspace Key (and Del Key)**

Procedures:

- (1) Enable the target object to enter the text editing status and locate the deletion position;
- (2) Pressing the **Backspace** key will remove one letter before the cursor each time it's pressed (pressing the **Del** key will remove one letter after the cursor each time it's pressed).

- **Delete multiple letters**

Procedures:

- (1) Enable the target object to enter the text editing status and select the text to be deleted;
- (2) Pressing the **Backspace** (or **Del**) key once will remove the selected text.

4) Copy text from other applications

Sometimes it is necessary to copy text from other applications to a Founder SuperLine page.

Procedures:

- (1) Copy the desired text from other applications;

(2) In the Founder SuperLine page, enable the target object to enter the text editing status and locate text pasting position;

(3) Click **Edit** > **Paste** or press the **Ctrl+V** shortcut key. The text will be inserted.

Note: *For the text copied from other applications, its properties are not reserved.*

4.6.6 Alter text properties

Founder SuperLine can process the following text properties: font, font size, color, weight alteration, italic, superscript/subscript, space width, word space and line space, etc. To alter a text object's properties, you may select the text object as a whole or select part of it. You may also change text properties while you typing in text (affecting the subsequent text). The latter two alterations are completed under the text editing status.

1) Change text properties using the Text toolbar

- Alter font and font Size

Procedures:

(1) Select the text object as a whole or enter the text editing status (select or deselect part of the text);

(2) Select the desired font from the font list box in the **Text** toolbar;

(3) Select the desired font size from the font size list box in the **Text** toolbar or input the desired font size in the box directly and then press the **Enter** key.

Notes:

① *In the font list box, fonts preceded with a "C" are Chinese fonts, while fonts preceded with an "E" are English fonts. The unit of the font size in the font size box is pound.*

② *When you change font and font size in this toolbar, the options in the **Character Attributes** dialog box change accordingly.*

- Boldface, italic and superscript/subscript

Procedures:

(1) Enter the text editing status (select or deselect part of the text);

(2) Press the **Boldface** , **Italic** , **Superscript**  or **Subscript**  icon in the **Text** toolbar.

Note: *As a letter cannot be superscript and subscript at the same time, the two icons cannot be pressed at the same time. Press one will deselect the other.*

2) Change text properties using Character Attributes dialog box

Using the **Character Attributes** dialog box, you can change multiple text properties simultaneously (font, font size, position, bold, space width, character space and line space) and design parameters for the related properties. It has more functions than the **Text** toolbar, but is not as convenient as the latter.

Procedures:

- (1) Enter the text editing status (select or deselect part of the text);
- (2) Click **Edit > Character Attributes**, or double-click the **Text** tool in the **Graph** toolbar, and the **Character Attributes** dialog box appears;
- (3) Select the desired text properties in the dialog box and click **OK** to exit. The settings will become effective.

The **Character Attributes** dialog box consists of three panes, where, you can set up font in the **Font** pane, font size, position, bold and italic in the **Font Size** pane and space width, character space and line space in the **Space** pane.

- **Font pane**

Available in the **Font** pane are a list box of optional fonts for selection. When a font is selected, it is displayed in the preview box.

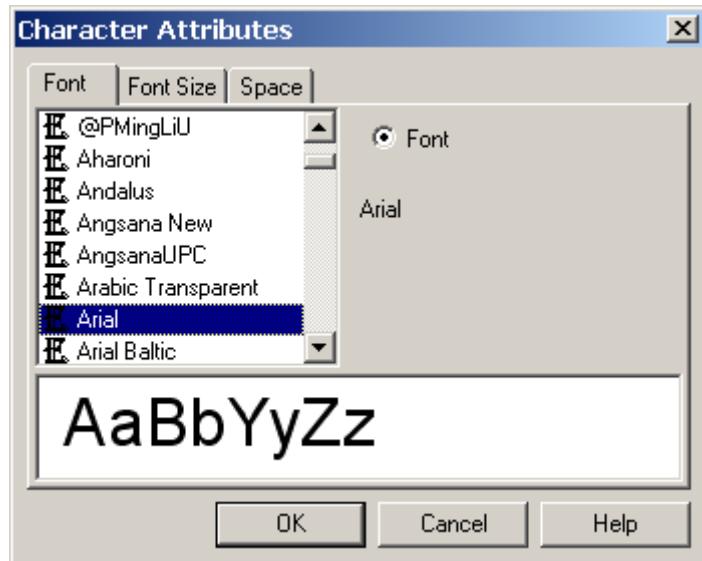


Figure 4-37

- **Font Size pane**

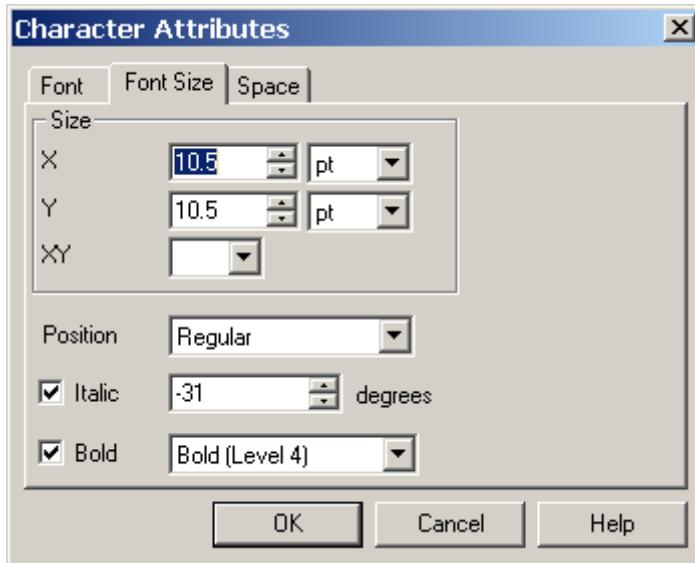


Figure 4-38

➤ Set up font size

A font size consists of two numbers, i.e., **X** font size and **Y** font size, representing the size of a character in the horizontal and vertical directions. When the two are equal, the character is square or otherwise, upright or flat.

In the font size page, you may input font sizes in the **X** Size and **Y** Size fields respectively, or select font sizes from the **XY** Size list box. In the latter case, the numbers in the **X** Size and **Y** Size fields change synchronically.

➤ Set up position

Available in the **Position** list box are three options - **Regular**, **Superscript** and **Subscript**. You need to select one of them.

➤ Set up bold

By checking the **Bold** box, the text is given Bold properties. You may select bold levels from the pull-down list box on the right. There are eight options: Bold (Level 1), Bold (Level 2), Bold (Level 3), Bold (Level 4), Thin (Level 1), Thin (Level 2), Thin (Level 3) and Thin (Level 4). The higher the level, the more obvious the change is.

➤ Set up italic

By checking the **Italic** box, the text is given italic properties. You may input the font's italic angle in the edit box on the right or adjust it using the small up/down arrow (ranging from -31° to $+31^\circ$).

● Space pane

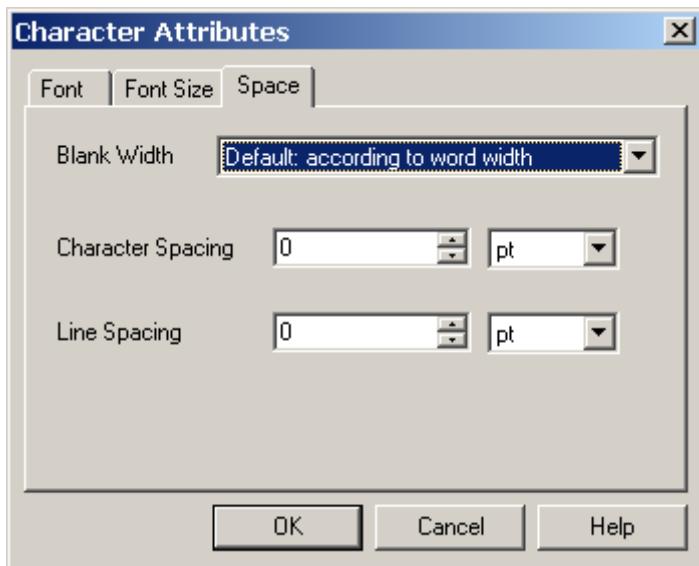


Figure 4-39

➤ Set up blank width

You may select blank width from the **Blank Width** list box. The options include:

Default: according to word width: the current font space width is the default width;

100% Empty: the space width is the same as the width of a character;

20% Empty: the space width is 20% of the width of a character;

30% Empty: the space width is 30% of the width of a character;

40% Empty: the space width is 40% of the width of a character;

50% Empty: the space width is 50% of the width of a character;

➤ Set up character space

The word space is used to control the distance between characters in a line. You may input it directly in the **Character Spacing** field or adjust it using the small up/down arrow.

➤ Set up line space

The line space is used to control the distance between two lines. You may input it directly in the **Line Spacing** field or adjust it using the small up/down arrow.

3) Change text color

The text's default color is black, which is not subject to the default color in the **Fill and Stroke** window. We may change the text object's color, which is limited to the text object as a whole but not part of it. We first need to select the text object and then use one of the following methods to change the fill color.

(1) **Fill and Stroke** window: check the **Fill** box and click the **Color** box below, then select the desired color in the pop-up **Color** dialog box;

(2) Click **Edit > Fill Color** and specify text color in the pop-up **Color** dialog box.

Note: You also have two methods to cancel the text color: select the text and click **Edit > Release Filling Color** or deselect the **Fill** box in the **Fill and Stroke** window.

4.6.7 Text block typeset

Text block typeset function is an enhancement for text objects, enabling typeset to multiple lines of text. The text objects discussed in previous sections are all in single line. The typesetting in text block is implemented by mouse dragging. This is the same as that in text object of a single line. Lines in text block are bordered by the width of the block, and the block width is adjusted depending on the actually occupied height of the text. Typeset operations for text block include not only the basic ones, such as defining font, font size, and etc., but also paragraph typesets, such as **Align Left**, **Center**, **Align Right**, and so on.

1) Generate text block

- **Generate a single line of text**

Procedures: Select the **Text** tool in the **Graph** toolbar, and click a place where you want to type on the page, and then you can type text at the place where the cursor stays. In this way, the text input will be arranged in a single line. The following figure provides an example of text object in a single line.



Figure 4-40

- **Generate text block**

Procedures: Select the **Text** tool in the **Graph** toolbar, click and drag the mouse on the page to form a rectangular box; release the mouse as the box is appropriately sized. The box defines the original size of the text block. You can type text at the place where the cursor stays. In this way, the text input will be automatically arranged within the borders, starting each new line at the right border. Nevertheless, you can also manually start a new line by pressing the **Enter** key as needed.

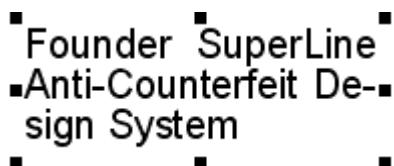


Figure 4-41

2) Edit text block

Editing operations such as input, cut, delete, copy and paste text, and operations on defining text properties such as font and font size, are same for both text blocks multiple lines and text objects in single line.

However, when editing text in text block, if the box is not big enough to hold all text, the size of the box will be automatically adjusted for holding them.

- **Text adjustment**

- **For single line**

When you drag the control point of the text object to adjust its size, the size of the text will be automatically adjusted as well.

Before adjustment:



The text "Founder SuperLine Anti-Counterfeit Design System" is contained within a single horizontal rectangular box. There are small black square handles at each corner and in the center of each side of the box, indicating it is a selectable text block.

Figure 4-42

After adjustment:



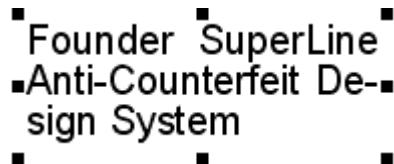
The same text "Founder SuperLine Anti-Counterfeit Design System" is now contained within a larger, more rectangular box. The text has been re-arranged into multiple lines to fit the new, wider container.

Figure 4-43

- **For text block**

When you drag the control point of the text block to adjust its size, only the size of the box will be changed. Text within the box, however, will be re-arranged into lines.

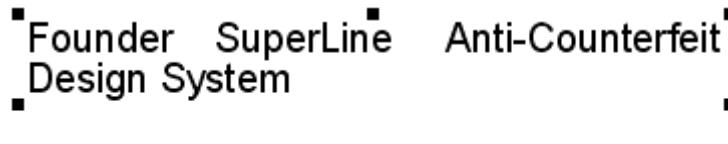
Before adjustment:



The text "Founder SuperLine Anti-Counterfeit Design System" is contained within a single horizontal rectangular box. There are small black square handles at each corner and in the center of each side of the box, indicating it is a selectable text block.

Figure 4-44

After adjustment:



The same text "Founder SuperLine Anti-Counterfeit Design System" is now contained within a larger, more rectangular box. The text has been re-arranged into multiple lines to fit the new, wider container.

Figure 4-45

3) Alignment in text block

The three align options in the **Text** toolbar are used for aligning text in text block, they are **Align Left** , **Center** , and **Align Right** .



Figure 4-46

This paragraph alignment functions only for text blocks. No effect is available if it is used to text objects in single line. The alignment is implemented by checking one of the three icons when the text block is in the editing status. The following figure is an example.

- **Founder SuperLine**
- Anti-Counterfeit
- Design System
-
-
-

Figure 4-47

Note: If text in text block is lined automatically, the three align options will take effect on all text within the box, regardless of whether all of it is selected or not.

4.7 Input images

4.7.1 input Image to page

You may also input images to the Founder SuperLine page. When designing an anti-counterfeit page, an image is usually the starting point for the further originality. A case in point is the Relief on Image, which empowers the printed images the anti-counterfeit function. For the specific methods of importing images into the page, refer to Section 3.4.2.

Founder SuperLine supports you to import various types of images, such as BMP, TIFF, TGA, JPEG, PS, EPS, and so on.

4.7.2 View image information

You may view image information (format and file address) after an image has been imported to the page.

Procedures:

- (1) Select **File > Layout Image Info** to open the **Layout Image Info** dialog box;

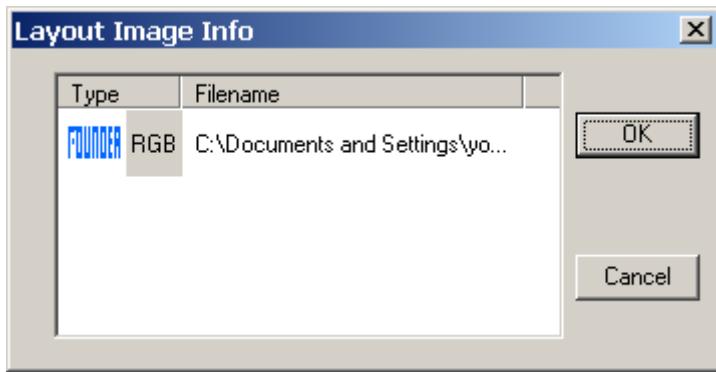


Figure 4-48

(2) In the dialog box, the miniatures, formats and corresponding file address (including file name) of the images in the current page are listed in sequence.

4.8 Convert text and images into graphics

In Founder SuperLine, the three basic objects of text, graphics and images are not independent. Their inter-conversion is possible to meet design and originality requirements. For example, text can be converted into graphics, and images to graphics, so as to contain anti-counterfeit information.

To convert text into graphics:

- (1) Select the text object to be converted;
- (2) Select **Object > Convert To Curve**, or click the **Convert to Curve** tool  in the **Graph** toolbar.

When the text is converted to curves, each character corresponds to a graphic object and multiple graphic objects group together.

The methods of converting images into graphics are given in Chapter 9.

4.9 Convert special graphics into common curve graphics

Graphic objects, always available in diversified shapes, are basically classified into rectangle, ellipse, polygon, sine curve and common Bezier curve classes. The first four classes feature somewhat symmetry and certain limitation in Node Editor reshaping. For free adjustment, you may convert them into common Bezier curves.

Procedures:

- (1) Select the one or more graphics to be converted;
- (2) Select **Object > Convert To Curve**, or click the **Convert to Curve** tool  in the **Graph** toolbar.

4.10 Generate contour

You can generate a contour by using the **Add Contour** tool  in the **Graph** toolbar or the **Add Contour** command under the **Object** menu.

Procedures:

- (1) Use the **Circle** tool  in the **Graph** toolbar to produce a circle or ellipse in the page, and make it selected;
- (2) Click the **Add Contour** tool  in the **Graph** toolbar, or select the **Add Contour** command under the **Object** menu to open the **Add Contour** dialog box, shown as in the following figure.

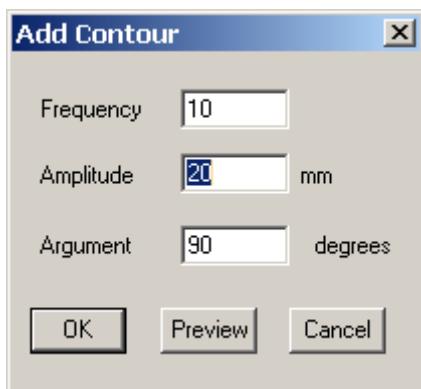


Figure 4-49

Frequency refers to nodes of the contour. **Amplitude** refers to the contour's vibration amplitude. And **Argument** refers to the location of the starting node. When the argument is set to 0° , the starting nodes of both the contour and the circle or ellipse are overlapping; and when it is set to 90° , the generated contour is symmetrical about the vertical axes of the circle or ellipse.

- (3) Define corresponding parameters and click **OK**, a contour shown as in the following example will be generated.

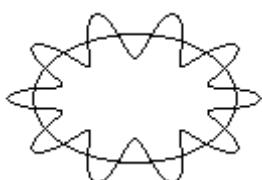


Figure 4-50

Notes:

- ① You can only add contour for circle or ellipse;*
- ② Contours are usually used as the outlines of guilloches;*

Chapter 5

Basic Distortions of Objects

This chapter describes the basic methods of distorting a Founder SuperLine object, such as methods of geometrical distortion and copying. In the anti-counterfeit design, it is quite often to distort and copy an object. The distortions herein are fundamental and of general significance. For object distortions and copying means specific to the anti-counterfeit design, refer to Chapter 8 and 9.

5.1 Geometrical distortion

The geometrical distortion of an object does not affect its basic shape so much. It primarily includes altering object position and size, rotating, mirroring and skewing the object. For details on how to alter object position, refer to Section 4.2.

5.1.1 Zoom an object

The zoom is designed to control the size of the current object to make it larger or smaller. You can zoom an object by using the **Select tool**  in the **Graph toolbar**, or **Object > Transform > Size** command, or the **Object Panel**.

1) Use the Select tool

Procedures:

- (1) Select one or more objects;
- (2) Drag the eight small black boxes (handles) at the border of the object.

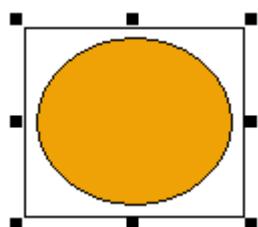


Figure 5-1

Note: Dragging the handles in the center of four sides zooms the object vertically or horizontally. Dragging the handles at four corners distorts the

*object both vertically and horizontally at, perhaps, different magnifications. To zoom the object at the same magnification, press the **Shift** key while dragging the handles.*

2) Use menu commands

Using the **Object > Transform > Size** command, you are able to control the size of the current object precisely.

Procedures:

- (1) Select one or more objects;
- (2) Select **Object > Transform > Size** to open the **Object Size** dialog box;

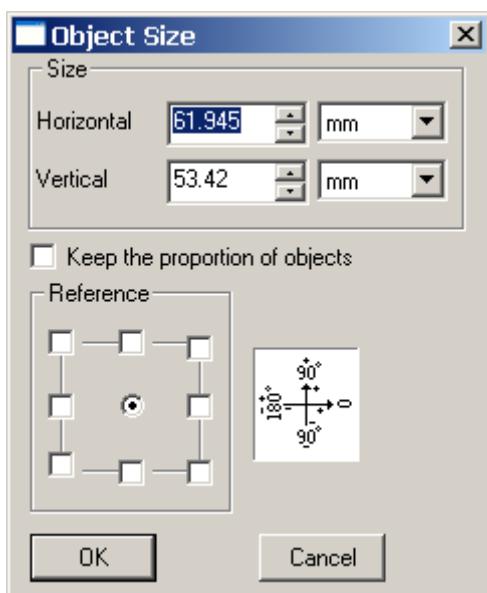


Figure 5-2

- (3) Input object size in the dialog box and click **OK**. The object's size changes accordingly.

In the **Object Size** dialog box, the numbers in the **Size** box determine object size, where, the **Horizontal** and **Vertical** fields determine the horizontal and vertical sizes of the object, respectively. Checking the **Keep the proportion of objects** box maintains the object's aspect ratio when its size is being changed.

In the course of distortion, the position of the object reference point selected will remain unchanged. The parameters in the **Reference** box determine the object reference point. The position of the object reference point will not change when you change object size. The selection of one corner locates the object reference point at a corner of the object frame. The selection of one side locates the object reference point in the center of a side of the object frame. The selection of the center point locates the object reference point in the center of the object.

In the case of selection of multiple objects, the size change will be based on the

out frame that contains all objects selected. The sizes in the dialog box are sizes of this out frame. The reference points are also based on this out frame. The relative position of each object will not change in the course of size change.

3) Use the Object Panel

When an object is selected, its position and size are displayed in the **Object Panel**. You can change object size proportionately or on the basis of the absolute value. For details, refer to Section 7.3.5.

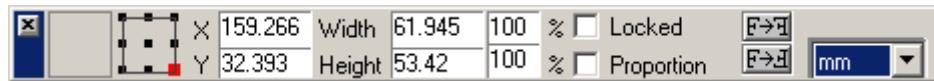


Figure 5-3

5.1.2 Rotate

When rotated, an object pivots on its center point, which is known as the rotation center. To rotate an object, you may use the **Select tool**  in the **Graph toolbar**, or the **Object > Rotate** commands.

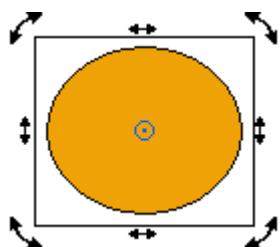


Figure 5-4

1) Use the Select tool

Procedures:

- (1) Select and click the object to be rotated. There appear one rotation icon at each of the four corners of the frame and one rotation center icon (by default, in the center of the object);
- (2) To relocate the rotation center, place the mouse at the rotation center icon. The cursor becomes a cross. Click and drag the rotation center to a desired position. Release the mouse;
- (3) Place the mouse at the rotation icon. The cursor becomes rotation pointer. Click first, then hold and drag along the rotation center, and then release the mouse. The object rotates along the rotation center.

2) Use menu commands

By using the **Object > Rotate** commands to rotate an object, you can control rotate angle precisely. For the typical 45°, 90° or 180° rotation, you can select it directly from the menu. In addition, the user may, of own accord, design rotation angle and other parameters.

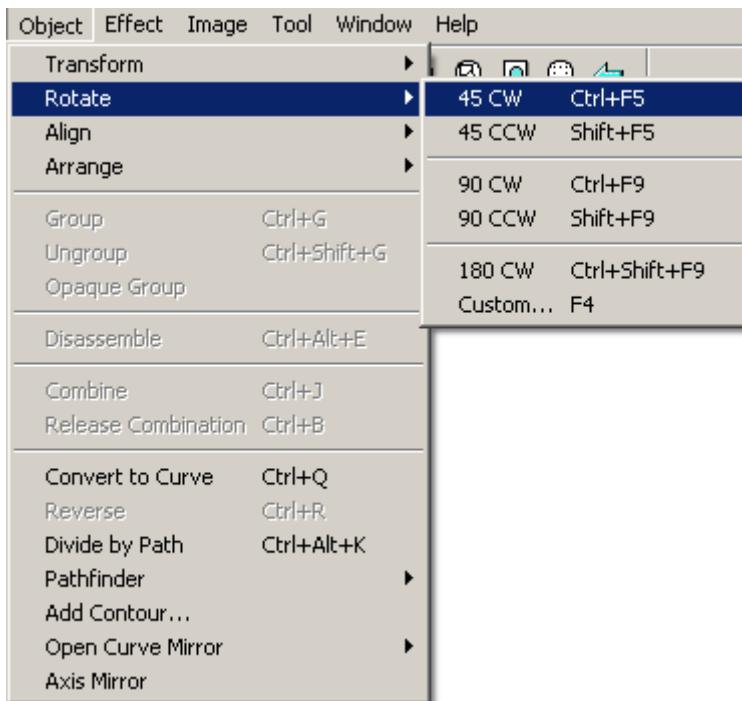


Figure 5-5

Procedures:

- (1) Select one or more objects;
- (2) Select **Object > Rotate > Custom** to open the **Rotation** dialog box;

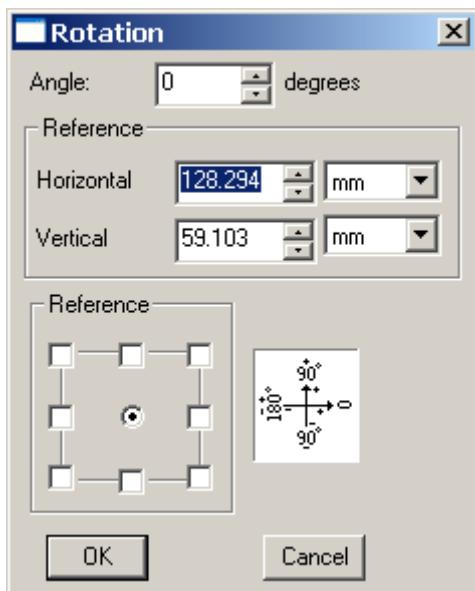


Figure 5-6

- (3) Input and control rotation angle and other data in the dialog box and click **OK**. The object is rotated.

In the **Rotation** dialog box, the number in the **Angle** box determines the object's rotation angle (unit: $^{\circ}$). You may input an angle in the box or change rotation angle.

Numbers in the **Horizontal** and **Vertical** fields display the rotation angle's horizontal and vertical coordinate, respectively. At the time of rotation, this position is the center.

The selection of a **Reference** check box determines the position of the object reference point, i.e., the position of the rotation center. The selection of one corner locates the object reference point at a corner of the object frame. The selection of one side locates the object reference point in the center of a side of the object frame. The selection of the center point locates the object reference point in the center of the object.

5.1.3 Mirror

1) Horizontal and vertical mirror

In Founder SuperLine, you can mirror an object horizontally and vertically.

Procedures:

- (1) Select one or more objects to be mirrored;
- (2) If the **Object Panel** is not available, select **Window > Panel** to open it;
- (3) To mirror an object horizontally, click the **Horizontal Mirror** button  in the **Object Panel**. To mirror an object vertically, click the **Vertical Mirror** button .

Notes:

- ① When multiple objects are selected, all objects are mirrored as a whole. In this case, both each object itself and its position are mirrored.
- ② Founder SuperLine also offers another kind of mirror, i.e., *Open Curve Mirror*, which will be described in Section 8.1.2. They are different.

2) Mirror along a random axis

To mirror along a random axis is to mirror the original object along a straight line segment. Mirroring along a random axis is capable of generating mirror images in random direction for any objects, as shown below.

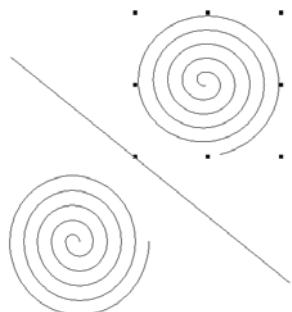


Figure 5-7

To mirror along a random axis, perform as follows:

- (1) Select the object to be mirrored;
- (2) Select the **Object > Axis Mirror** command. Place the mouse in the page and the cursor becomes a curved arrow. When you place the cursor in a straight line segment, click it (if there is not any object at the point of click or the layer containing the object is not editable or it is not a graphic object, a corresponding message box will pop up. Click **OK** in the box. The cursor is still a curved arrow and you can click the path once again. If you select **Cancel**, the cursor will restore to its normal shape, indicating that you cannot make selection any more. If the graphic object at the point of click is not a straight line segment, a message box will pop up. Click **OK** in the box. The cursor restore to its normal shape. No selection will be made any more) to make it the symmetric axis. A mirror image will be generated along this straight line.

5.1.4 Skew

To skew, you may use the **Select tool**  in the **Graph** toolbar, or the **Object > Transform > Skew** menu command.

1) Use the Select tool

Procedures:

- (1) Select one or more objects to be skewed, and click again, a skew icon is available in the center of each of the four frames;
- (2) Move the mouse to the skew icon. The cursor becomes the  shape. Click and drag along the frame, and then release the mouse, the object will be skewed.

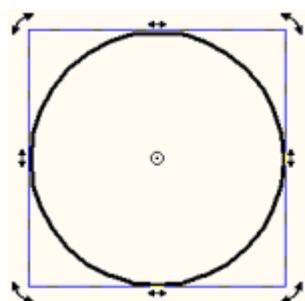


Figure 5-8

2) Use menu commands

Procedures:

- (1) Select one or more objects to be skewed;
- (2) Select the **Object > Transform > Skew** command. The **Skew** dialog box now appears;

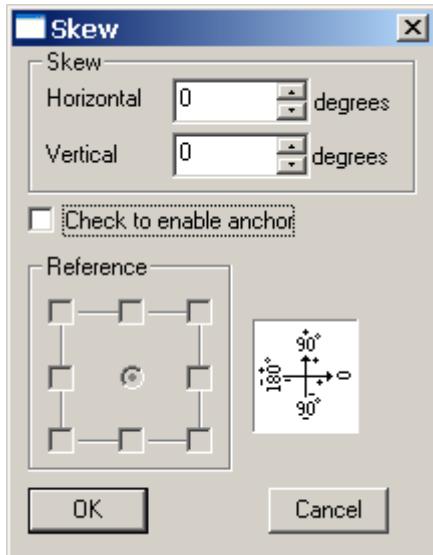


Figure 5-9

(3) Input and control skew angle and other data in the dialog box and click **OK**. The object is skewed.

In the **Skew** dialog box, the numbers in the **Skew** box determine the object's skew angle, where, the **Horizontal** box determines the horizontal skew angle. With a positive number, the object is skewed leftward or otherwise, rightward. The **Vertical** box determines the vertical skew angle. With a positive number, the object is skewed upward or otherwise, downward.

The anchor point refers to the fixed point when the object is skewed. The skew is based on this point. Ticking off the **Check to enable anchor** check box means to skew the object with an anchor point, which is selected in the **Reference** box. If the **Check to enable anchor** check box is not selected, the object skew will be based on the center of the object.

The parameter in the **Reference** check box determines the position of the anchor point for skewing the object. The selection of one corner locates the anchor point at a corner of the object frame. The selection of one side locates the anchor point in the center of a side of the object frame. The selection of the center point locates the anchor point in the center of the object.

5.2 Copy objects

Founder SuperLine offers a variety of effective tools for copying objects. Here, only a few simple tools are introduced. Other copy methods are usually related to the making of the anti-counterfeit design, which will be detailed in Chapter 8.

5.2.1 Use the clipboard

Procedures:

- (1) Select one or more objects to be copied;
- (2) Select the **Edit > Copy** command or press the shortcut key Ctrl+C to copy the object to the clipboard, or, Select the **Edit > Cut** command or press the shortcut key Ctrl+X to delete the object currently selected and copy them to the clipboard;
- (3) Select the **Edit > Paste** command or press the shortcut key Ctrl+V, one copy of the object is available in the original position.

5.2.2 Use the Edit > Redo command

- (1) Select one or more objects to be copied;
- (2) Select the **Edit > Duplicate** command or press the shortcut key Ctrl+D to copy directly the object currently selected without using the clipboard. The offset of the new object relative to the original one is determined by the **Paste Offset** parameter in the **Options** dialog box.

Chapter 6

Organize and Manage Objects

Any page design software has to deal with the relationship between various objects in the page to enable a best distribution effect of the objects as a whole in the page. Founder SuperLine also provides quite a number of functions to handle the object relationship, such as adjust object sequence, group, combine, clip, align and distribute objects. For the complex page, Founder SuperLine offers the layer management to distribute objects over different layers so as to control the display, edit and export states, respectively.

6.1 Group and ungroup objects

As described in Section 4.1.4, there is a kind of composite object, i.e., group object, in Founder SuperLine. The objects in the same group can be selected simultaneously for unified operation as in the same object. At the same time, they are independent of each other and their respective properties remain unchanged.

To group refers to combine multiple objects into a group object.

Procedures:

- (1) Select the multiple objects to be grouped;
- (2) Select the **Object > Group** command, or click the **Group** tool  in the **Graph** toolbar, or select **Group** from the right-click pop-up menu. When objects are grouped, their respective properties remain unchanged. For example, if the fill color is red originally, then it is still red after grouping.

To ungroup, contrary to group, refers to break up the group object and restore the independent state of each object in the group.

Procedures:

- (1) Select the group object in question;
- (2) Select the **Object > Ungroup** command, or click the **Ungroup** tool  in the **Graph** toolbar, or execute the **Ungroup** command in the right-click pop-up menu.

6.2 Nontransparent group object

The nontransparent group object is virtually also a kind of group object, which, by filling the graphic and adjusting the sequence and layer, produces a non-transparency effect. It has a special feature, i.e. if not filled, the graphic object will be filled white, or else, the fill color will not change.

The procedures to form a nontransparent object:

- (1) Select a group object. If you want to select two or more ungrouped objects, first group them;
- (2) Select the **Object > Opaque Group** command. The object will be filled white and becomes nontransparent. It will mask other objects under this group object, while the objects in this group object will not mask each other.



Figure 6-1

Notes:

- ① If the selected object contains graphics or text, the fill of the graphics or text will not be affected.
- ② The nontransparent group object may also be ungrouped as the common group object.

6.3 Disassemble

It is impossible to convert complex graphic objects (such as those made available through complex distortions) into simple objects by ungrouping them. The only way out is to dismantle them. For example, the line generated through relief on straight lines is a separate object instead of a group object, which you cannot break up through ungrouping. In this case, you can resort to the **Disassemble** function.

Procedures:

- (1) Select the object to be dismantled;
- (2) Click the **Disassemble** tool  in the **Graph** toolbar, or select the **Object > Disassemble** command.

6.4 Place objects in the clip mask and pick up clip contents

The clip mask, a graphic object, is designed to clip other objects such as images, text and graphics to get special effects. After clipping other objects, the clip mask becomes another kind of composite object, i.e., clip mask object. The clip mask features a graphic object's properties such as outline and fill color. As a consequence, a clip object has the distinct clip edge of certain width and color. You may also fill color in the clip area not filled.

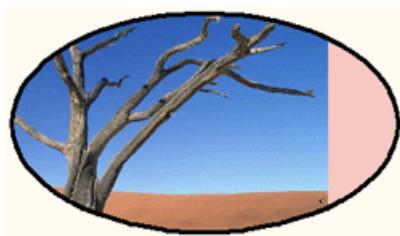


Figure 6-2

Placing an object into the clip mask means clipping the object. Contrary to placing an object into the clip mask, picking up clip contents restores the original status of the clipped object.

6.4.1 Place to the clip mask

Procedures:

- (1) Create a graphic object to serve as the mask object;
- (2) Move the mask object or the clipped object to ensure the appropriate part to be clipped;
- (3) Select the clipped object;
- (4) Select the **Effect > Making Clipping Mask** command. The cursor now becomes an arrow ➡. Use this arrow to click the mask object's edge. The content object is clipped and only the part inside the mask object is left.

Notes:

- ① If the mask object locates under the clipped object, you may make it above (sequence adjustment) to ensure the mask is selected.
- ② The clipped objects may be graphic objects, text, images, group objects or other clip mask objects.
- ③ After the clip mask object is generated, you may change the outline properties and fill color, as with the case of the graphic object.

6.4.2 Pick up clip contents

After placing the content object into the mask object, you may, if necessary, pick up the content object and restore it to the status before clipping.

Procedures:

- (1) Select the clip object;
- (2) Select the **Effect > Making Clipping Mask** command. The content last placed into the mask will be released and restored to its original status.

In the case of a multiple clip, repeat the procedures above to pick up all objects placed into the mask.

6.4.3 Adjust clip scope

If you are non satisfied after clipping, for example, some part that will be clipped is not clipped or some part that will be reserved is clipped, you have two ways to remedy.

- (1) Move the clip object while keeping pressing the **Ctrl** key and you will see that it is the clip frame instead of the whole clip object that is moved. Well, what's the use? Right, you can adjust clip scope after clipping;
- (2) First pick up the clip object, adjust the position and then clip.

6.5 *Adjust object sequence*

In a Founder SuperLine page, objects are assigned with the stacking sequence. The object created first locates in front of the object created later. The object in front may mask the one behind. The sequence of objects when they are created is their natural sequence. Obviously, maintaining the natural sequence is not enough. Founder SuperLine allows you to adjust object sequence at will by, for example, flipping the object behind. In addition, Founder SuperLine also provides the layer management system, by which you can distribute objects in the page over different layers, mask the objects in the lower layer with the objects in the upper layer and display, edit and export simultaneously the objects in the same layer.

This section discusses only the sequence adjustment for objects in the same layer, and thus the adjustment only affects the overlapping relations among objects in one layer. When more than one layer exist in the page, an object that is located on the top of the current layer, may not be displayed on top of the page.

Founder SuperLine offers a good many ways to change object sequence, which will be detailed respectively. The following example shows a natural sequence.

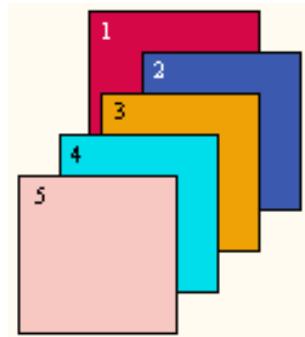


Figure 6-3

6.5.1 Bring to Front

The **Bring to Front** operation moves an object to the front of all objects in a layer. After the operation, the object can mask all other objects in the same layer.

Procedures:

- (1) Select one or more objects whose sequences will be adjusted;
- (2) Select the **Object > Arrange > Bring to Front** command. We take the "3" object in the figure above as an example, when being brought to front, it will be shown as follows:

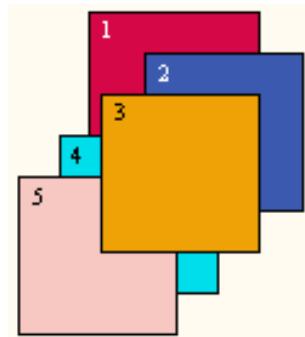


Figure 6-4

For multiple objects selected, their sequence will not change after the operation. All of them locate above other objects in the same layer.

6.5.2 Send to Back

The **Send to Back** operation moves an object to the back of all objects in a layer. After the operation, other objects in the same layer will mask the object.

Procedures:

- (1) Select one or more objects whose sequences will be adjusted;
- (2) Select the **Object > Arrange > Send to Back** command. We still take the "3" object in the figure above as an example, when being sent to back, it will be

shown as follows:

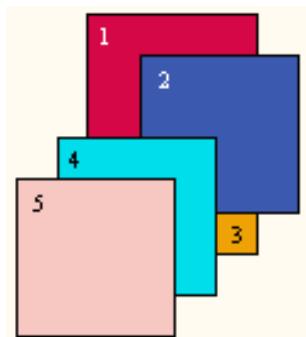


Figure 6-5

For multiple objects selected, their sequence will not change after the operation. All of them locate behind other objects in the same layer.

6.5.3 Bring Forward

The **Bring Forward** operation interchanges the sequence of an object relative to the object above it.

Procedures:

- (1) Select one or more objects in question;
- (2) Select the **Object > Arrange > Bring Forward** command. Given the example above, when being brought forward, the "3" object will be shown as:

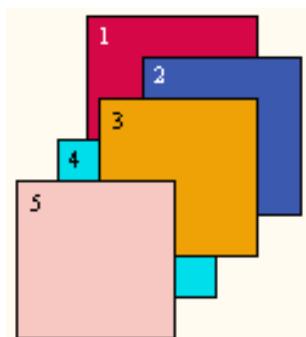


Figure 6-6

6.5.4 Send Backward

The **Send Backward** operation interchanges the sequence of an object relative to the object behind it.

Procedures:

- (1) Select one or more objects in question;
- (2) Select the **Object > Arrange > Send Backward** command. Given the example above, when being sent backward, the "3" object will be shown as:

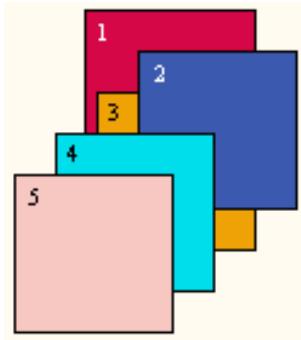


Figure 6-7

6.6 Align objects

The **Align** tools are designed to determine the objects' position and size relationship to each other, such as center alignment of objects, equal width, equal height and placing the object at the top of the page. Founder SuperLine offers easy-to-use and useful align tools to achieve this purpose. The **Align** toolbar that is shown as in the following figure.



Figure 6-8

To use the **Align** toolbar:

- (1) Select one or more objects from the page. The related icons in the **Align**

toolbar are now useable;

(2) Click an icon in the **Align** toolbar to execute the corresponding operation.

The following table lists the functions of the icons in the **Align** toolbar:

Icon	Name	Function
	Center	The centers of all objects selected are aligned with the center of the object selected last (in case of the use of marquee, aligned with the object in the uppermost layer of the arrange sequence).
	Left	The left frames of all objects selected are aligned with the left frame of the object selected last (in case of the use of marquee, aligned with the object in the uppermost layer of the arrange sequence).
	Vertical Align Center	The vertical central lines of all objects selected are aligned with the vertical central line of the object selected last (in case of the use of marquee, aligned with the object in the uppermost layer of the arrange sequence).
	Right	The right frames of all objects selected are aligned with the right frame of the object selected last (in case of the use of marquee, aligned with the object in the uppermost layer of the arrange sequence)
	Top	The top frames of all objects selected are aligned with the top frame of the object selected last (in case of the use of marquee, aligned with the object in the uppermost layer of the arrange sequence).
	Horizontal Align Center	The Horizontal central lines of all objects selected are aligned with the Horizontal central line of the object selected last (in case of the use of marquee, aligned with the object in the uppermost layer of the arrange sequence).
	Bottom	The bottom frames of all objects selected are aligned with the bottom frame of the object selected last (in case of the use of marquee, aligned with the object in the uppermost layer of the arrange sequence).

	Adjacent Horizontally	The selected objects arrange closely horizontally relative to the leftmost object with their vertical positions unchanged, i.e., the leftmost object will not move, the second object from left arranges to the right, the third object from left arranges further to the right and so on. The rightmost object arranges on the rightmost.
	Adjacent Vertically	The selected objects arrange closely vertically relative to the bottommost object with their horizontal positions unchanged, i.e., the bottommost object will not move, the second object from bottom arranges above it, the third object from bottom arranges further above it and so on. The uppermost object arranges on the uppermost.
	Identical Width	The center positions of all objects will not change, while their horizontal dimensions are the same as the horizontal dimension of the object selected last (in case of the use of marquee, as the horizontal dimension of the object in the uppermost layer of the arrange sequence. You can not equal the width of a horizontal or vertical straight line with other objects).
	Identical Height	The center positions of all objects will not change, while their vertical dimensions are the same as the vertical dimension of the object selected last (in case of the use of marquee, as the vertical dimension of the object in the uppermost layer of the arrange sequence. You cannot equal the width of a horizontal or vertical straight line with other objects).
	Identical Size	The center positions of all objects will not change, while their horizontal and vertical dimensions are the same as the dimensions of the object selected last (in case of the use of marquee, as the vertical dimension of the object in the uppermost layer of the arrange sequence. You cannot equal the width of a horizontal or vertical straight line with other objects).

	Horizontal Distribute Space	The horizontal distances of adjacent objects are the same for all objects selected. The position of an object is related only to the positions of the two objects on the leftmost and rightmost among the objects selected and independent of the sequence in which the object is selected. The positions of the objects on the leftmost and rightmost will not change.
	Vertical Distribute Space	The vertical distances of adjacent objects are the same for all objects selected. The position of an object is related only to the positions of the two objects on the uppermost and bottommost among the objects selected and independent of the sequence in which the object is selected. The positions of the objects on the uppermost and bottommost will not change.
	Page Horizontal Center	The horizontal centers of all objects selected locate in the horizontal center of the page with their vertical positions unchanged.
	Page Vertical Center	The vertical centers of all objects selected locate in the vertical center of the page with their horizontal positions unchanged.
	Page Bottom	The bottoms of all objects selected are aligned with the page bottom with their horizontal positions unchanged.
	Page Top	The bottoms of all objects selected are aligned with the page top with their horizontal positions unchanged.
	Page Left	The left sides of all objects selected are aligned with the left side of the page with their vertical positions unchanged.
	Page Right	The right sides of all objects selected are aligned with the right side of the page with their vertical positions unchanged.

Notes:

① *In the table above, those with the * mark indicate that the icons are effective when one or more objects are selected. Those with the ** mark indicate that the icons are effective when two or more objects are selected and those with the *** mark indicate that the icons are effective when three or more objects are selected.*

② *For operations with the ** mark, their effects depend on the sequence of the object selected. The alignment or distribution is always based on the object selected last and in case of the use of marquee, on the object in the uppermost*

layer of the arrange sequence.

6.7 Layer management

Founder SuperLine offers the layer management system, i.e., multiple layers are allowed in one page. The user may create objects in different layers at will. The objects in various layers are independent and superposable, too, to form a complete page. The layer management system is capable of manipulating various objects and hiding some objects flexibly and preventing other objects from being affected when an object is being revised. It also supports layer-specific control of printout.

The skilled layer operation benefits your design in a lot of ways and boosts you productivity and making effects remarkably.

Founder SuperLine's layer system features the following:

- (1) From top down, there may be multiple layers in a page. The object in the upper layer may mask the object in the lower layer;
- (2) The user can create or edit objects in each layer without affecting other layers;
- (3) The layer sequence is adjustable;
- (4) You can move and copy objects between layers;
- (5) Depending on your options, each layer can or cannot be displayed, edited and exported. The object in the layer not editable cannot be selected and changed.

6.7.1 Layers window

In the Founder SuperLine page, you can, as the case may be, create quite a few layers, while only one layer is active. All new objects are created in the current layer.

Generally, the system has a default layer, i.e., layer 1. When you select the **Window > Layers** command, the **Layers** window pops up. It is a rotate window with rotate window properties. For details, refer to Section 3.3.

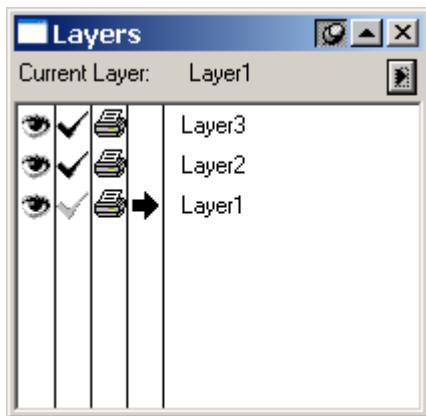


Figure 6-9

The Layer window contains each current layer and its status, in which, each layer occupies one line and each line has five columns.

- Whether the layer is visible: there is an eye icon  in this column. If the eye is black, the layer is visible. Otherwise, the layer is invisible in the page and therefore, is not editable;
- Whether the layer is editable: there is a tick icon  in this column, indicating whether the layer is editable. An editable layer can be made the current layer. You can select and change the object in such a layer;
- Whether the layer is printable: there is a printer icon  in this column, indicating whether the layer is exportable;
- Current layer column: the layer with a right arrow icon  is the current layer. You may click in these sub-columns to switch the current layer. New objects are always in the current layer;
- Layer name: the name of various layers.

Above this dialog box, there is a pop-up menu button . Clicking it will pop up a menu, with which, you can create a new layer or delete, copy, move and edit an existing layer. The subsequent parts will introduce this in detail.

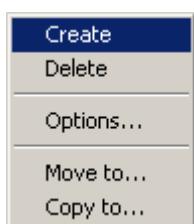


Figure 6-10

6.7.2 Set up layer properties

The layer properties include layer name and whether the layer is visible, editable and exportable.

The layer name is used to mark the layer. That whether the layer is visible refers

to display or hide the object in this layer, which is designed to accelerate the display and facilitate the user to focus on the design object. That whether the layer is editable refers to the possibility to select or change the object in this layer. That whether the layer is exportable refers to that whether the page, when exported as PS/EPS, contains the object in this layer.

You may change the layer properties directly in the Layers window or through the layer setup menu in the Layers window.

1) Change layer properties in the Layers window

Procedures:

- (1) Open the **Layers** window if it is closed;
- (2) To display or hide a layer, click the eye icon in the first column of the layer to switch the layer's display status. The display in the page changes synchronically;
- (3) To switch a layer's edit status, click the tick icon in the second column of the layer. The grayed icon indicates that the layer is not editable;
- (4) To set up whether a layer is exportable, click the printer icon in the third column of the layer to switch the layer's export status. The grayed icon indicates that the layer is not exportable;
- (5) To make a layer active, click in the fourth column in the layer to move the black arrow icon to this layer;
- (6) To change layer name, double-click the name in the fifth column of the layer. The **Layer Options** dialog box now pops up. Type in a new layer name in the **Name** field.

2) Change layer properties in the Layer Properties Setup

Procedures:

- (1) Open the **Layers** window if it is closed;
- (2) To change a layer's properties, click the layer name in the fifth column of the layer to select it;
- (3) Double-click the name in the fifth column of the layer in the **Layers** window, or, click the triangle button  and select the **Options** in the pop-up menu. The **Layer Options** dialog box now appears;

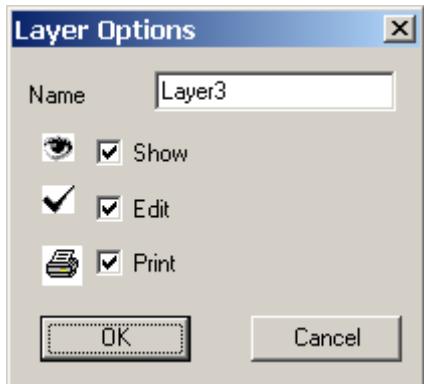


Figure 6-11

(4) Set up layer properties in the **Layer Options** dialog box and click **OK**;

In the **Layer Options** dialog box, the **Name** displays the name of the current layer, which can be changed directly.

Ticking off the **Show** check box makes the layer visible. Ticking off the **Edit** check box makes the layer editable. Ticking off the **Print** check box makes the layer exportable.

6.7.3 Layer operations

In Founder SuperLine, the user can create and delete layers as well as change layer sequence.

1) Create a new layer

Procedures:

(1) Click the triangle button in the **Layers** window and select the **Create** command in the pop-up menu. A new layer will be inserted into the **Layers** window. The user may revise the new layer using the other operating commands. The new layer is, by default, always in the uppermost layer.

2) Delete the current layer

Procedures:

(1) To delete a layer, click the layer name in the fifth column of the layer to select it;

(2) Click the triangle button in the **Layers** window and select the **Delete** command in the pop-up menu. The layer currently selected together with the object thereof will be deleted.

3) Change layer sequence

Changing layer sequence is able to affect the effect of the whole page more obviously, which, together with adjusting object sequence, affects the final result of the superposed objects in various layers.

To change layer sequence:

In the Layers window, click the fifth column of the layer and drag it to other layer. Release the mouse. Then the layer is placed to the appropriate position.

6.7.4 Move and copy objects between layers

You can copy or move objects from one layer to another through the following methods:

1) Use the clipboard

Procedures:

- (1) Make a layer as the current layer. Select the object in it. Press the Ctrl+C (copy) or Ctrl+X (cut) key;
- (2) Make another layer current. Press the Ctrl+V key. The object will be copied or moved to this layer.

2) Use the Layers window

Procedures:

- (1) Select the object to be moved or copied;
- (2) Click the triangle button  in the Layers window and select the **Move to** or **Copy to** command in the pop-up menu. The cursor becomes a large arrow  or ;
- (3) In the **Layers** window, click the target layer. The selected object will be moved or copied to the selected layer.

Chapter 7 Management of Design Environment

The previous chapters are generally dedicated to the operation of objects on page. This chapter will touch on the overall management of the design environment. Design of anti-counterfeit active objects is required to consider the page size. In most cases, the design should consider whether the object aligns with the specific page location, which cannot be accurately achieved by the object alignment methods described in Chapter 6. It also entails grid, guides and appropriate snap modes. The page design also needs to display or hide some toolbars, rulers and object panel, which also fall into the scope of the design environment. In addition, there are also some macro configuration configurations, e.g. paste offset and delete level.

In general, this chapter will help the user to improve the design efficiency and flexible design skills.

7.1 Page setup

The user can configure the size and style of a new page as follows: click **File > New**, pop up **Page Setup** dialog box, configure the page size and click **OK** to exit.

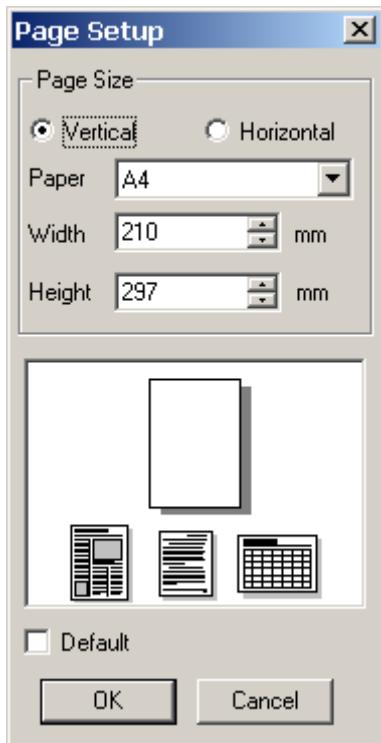


Figure 7-1

The user may configure the page properties in the **Page Setup** dialog box.

- Configure page size: select the options in **Paper** dialog box, display the page size in the **Width** and **Height** boxes, type the page size in the boxes (Paper list box displays **Custom**), select the **Horizontal** or **Vertical** button. Preview the horizontal-vertical page at the bottom of the dialog box.
- Configure to the default value: select **Default** check box to configure the new page at the default value until the next new value. The default page is vertical A4 paper.

After the parameter configuration, click **OK** to finish the page, then the main interface will display the page.

The user may also follow the above steps to re-configure the page by clicking **File > Page Setup** menu.

7.2 Object snapping modes

By snap operation herein, the user may locate the position and size at a specific place to accurately control the size and position of the objects as well as the position relation among objects when creating/moving objects and changing object size by the mouse.

In Founder SuperLine, the objects may be snapped to the grid points, guides and other objects on the page. Appropriate setup of the grid, guides and snap modes will facilitate user in such operations as object alignment and accurate positioning.

If the user has configured one or more than one snap modes, a blue little box will follow the cursor on the page. While you are moving an object by dragging the cursor, this blue little box will automatically leap to an adjacent guides, grid, or an object. Release the mouse at such moment, the object will accurately position at the place where the blue little box leaps.

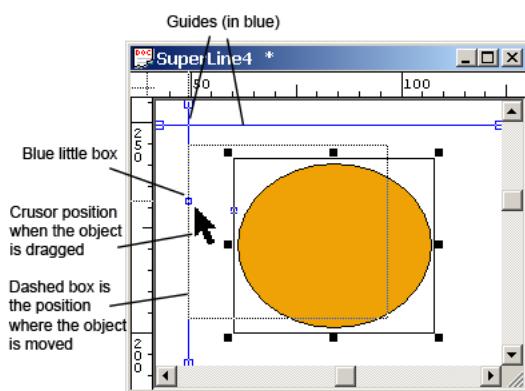


Figure 7-2

7.2.1 Grid setup and Snap to Grid

The grids are a series of points uniformly distributed on the page forming the horizontal and vertical lines. Grid setup will control the density of the grid points.

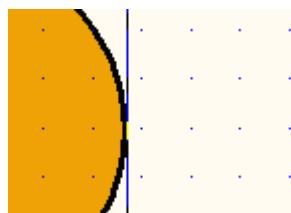


Figure 7-3

Users may follow the following steps in the grid setup:

(1) Select **View > Grid > Setting** command. The **Grid** dialog box pops up now;

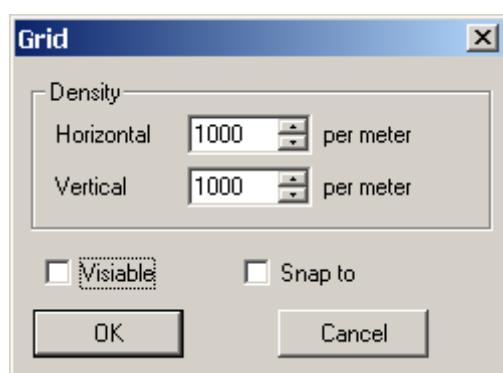


Figure 7-4

(2) Set up the grid parameters in the box, exit by clicking **OK**.

In the dialog box, users can configure the vertical/ horizontal grid point numbers in each meter in the **Horizontal** and **Vertical** boxes. If the **Visible** check box is clicked, then the grids are visible, otherwise are invisible.

When selecting **Snap to** check box, an object moved will automatically position itself at a nearby grid. That is to say, the object can be snapped to the grid.

Note: *In case the grid points are too dense with small amplification, the display will hide some grid points. Otherwise, the dense grid points will impair the page display effect.*

Users can determine whether to display the grid or not, and whether to enable the **Snap to Grid** function via the menu as follows:

(1) Select **View > Grid > Show** command to display or hide the grids;

(2) Select **View > Grid > Snap to Grid** to determine whether to enable the **Snap to Grid** function.

The above two menus are on-off menu. The mark activates the corresponding setup. And re-selection of the menu will delete the mark and deactivate the setup.

7.2.2 Guides setup and Snap to Guides

The guides are some special lines on the page for object alignment allowing for no print or output. With the guides in place, the page objects may be snapped or aligned to the guides to form the ideal array mode.

In Founder SuperLine, users can use the mouse or the menu to add guides, delete or modify the existing guides. The mouse dragging is intuitive and simple, and the menu can accurately locate the guides.

1) Mouse dragging

- **Add guides by the mouse**

Procedures:

(1) Select the **Select** tool in the **Graph** toolbar;

(2) Move the mouse to the ruler on the page (in case of no ruler display, select **View > Rulers** command to display the ruler), click to move it in the graphic zone on the page, during which a blue line will move with the cursor as shown in the figure below (the empty arrow representing the position to drag the mouse, the black arrow representing the mouse moving direction);

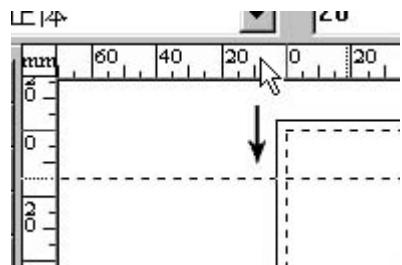


Figure 7-5

(3) Release the mouse at the appropriate position, where a blue guide line is displayed.

Dragging the mouse horizontally will create the horizontal line, and dragging the mouse vertically will create the vertical line.

- **Delete guides by the mouse**

Procedures:

- (1) Select the **Select** tool in the **Graph** toolbar;
- (2) Move the mouse to a guide line, click to move to the ruler, during which the guide line will move with the cursor as shown in the figure below (the empty arrow representing the position to drag the mouse, the black arrow representing the mouse moving direction);

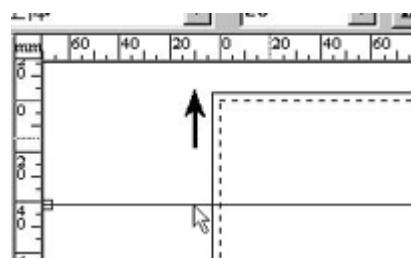


Figure 7-6

(3) Release the mouse when it is moved to the ruler, the guide disappears.

- **Move guides by mouse**

Procedures:

- (1) Select the **Select** tool in the **Graph** toolbar;
- (2) Move the mouse to a guide, click to move to the cursor in the graphic area, during which the grid will follow the cursor;
- (3) Release the mouse at the appropriate position, the guide moves to the mouse-loosing place.

- **Change the gradient of the guides by the mouse**

Procedures:

- (1) Select the **Select** tool in the **Graph** toolbar;
- (2) Move the mouse to one end of a guide, click to move to the ruler, during which the guide will move with the cursor as shown in the figure below (the empty arrow representing the position to drag the mouse, the black arrow representing the mouse moving direction);

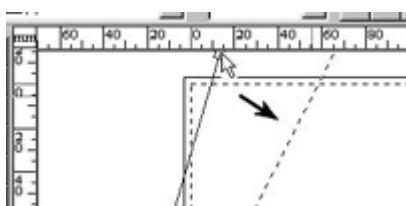


Figure 7-7

- (3) Release the mouse at appropriate position, the gradient of the guide is changed (one end point fixed).

2) Menu mode

Procedures:

- (1) Select **View > Guides > Setting** to open the **Guides** dialog box;

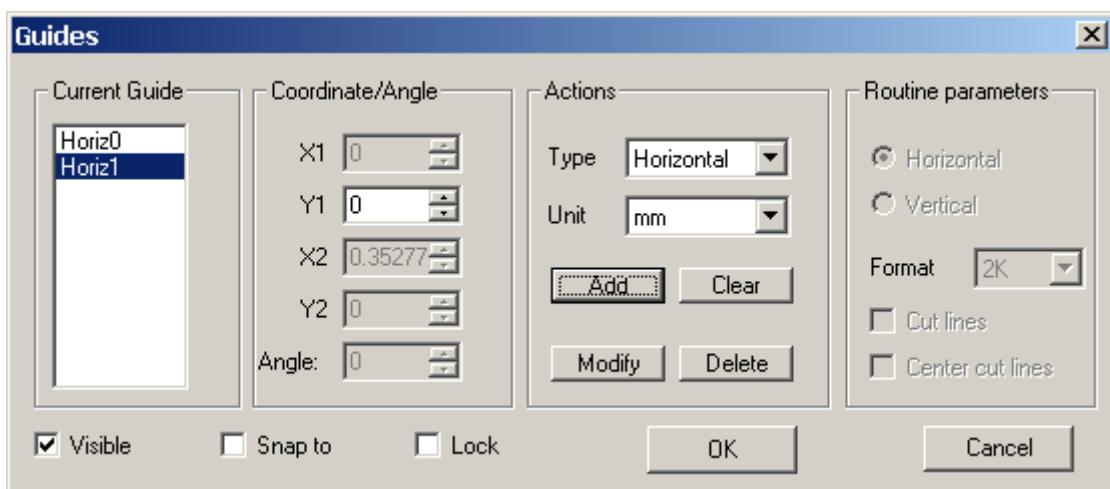


Figure 7-8

- (2) The existing guides are displayed in the **Current Guide** list. You can add new guides, or delete or modify existing guides through this dialog box. When you complete the setting, click **OK**.

● Add guides

When adding guides, there are five candidate guides in the **Type** list box of **Actions** area:

- **Horizontal** line: parallel to the horizontal axis of the page (axis X), define the vertical coordinate in **Y1** box, display **Horiz X** in the **Current Guide** list box;
- **Vertical** line: parallel to the vertical axis of the page (axis Y), define the

vertical coordinate in **X1** box, display **Vert X** in the **Current Guide** list box;

- **Point-point** line: defined by two-point coordinate, define the two-point coordinate in **X1**, **Y1**, **X2** and **Y2** boxes, display **Two-point X** in the **Current Guide** list box;
- **Point-slope** line: defined by starting-point coordinate and line angle, define the point coordinate and angle in **X1**, **Y1** and **Angle** boxes, display **Angle X** in the **Current Guide** list box;
- **Custom** line: this parameter enables you to generate multiple guides, uniformly dividing the page as defined by the format of paper splitting. When selecting the **Custom** line, the user may set up parameters in the **Routine parameters** area. In the **Format** list box, the user may select the format modes including 2K, 4K, 8K, 16K, 32K and 64K. Selecting the **Horizontal** round button, the guide will horizontally divide the page. Selecting the **Vertical** round button, the guide will vertically divide the page. Users may select the **2K** or **Center cut lines** check box to see the distinction between the **Vertical** and **Horizontal** buttons. By selecting the **Cut Lines** check box, the page will be surrounded by the cutting lines at the sides. By selecting the **Center cut lines** check box, the page will be centrally divided by the cutting line. As the custom lines are either horizontal or vertical, the **Current Guide** list box display the general lines as **Horiz X** or **Vert X**.

After selecting the type and parameters of the new guides, click **Add** button, the guide will be added to the **Current Guide** to be displayed in the page.

● **Delete guides**

Select the guide(s) to be deleted from the **Current Guide** list box and click the **Delete** button, the line is deleted from the **Current Guide** list and the page. If you want to delete all guides, click the **Clear** button.

● **Modify guides**

Select the target guide in **Current Guide** list box, modify the parameters in **X1**, **Y1**, **X2**, **Y2** and **Angle** boxes, click the **Modify** button, the new parameters will apply to the guide on the page.

Notes:

- ① *To change the guide type (e.g. from horizontal to vertical, from vertical to diagonal), select the new type in **Type** list, modify the parameters.*
- ② *The **Current Guide** list box will not change the guide name with the type changed. For instance, **Horiz5** guide, even modified to diagonal or vertical, is still named as **Horiz5**.*

- **Show, snap to and lock guides**

By selecting the **Visible** check box in the **Guides** dialog box, the added guides will be displayed on the page. By selecting the **Snap to** check box, the objects may be snapped to the guides. That is to say, when users create/ move objects and change object size by the mouse, the object will automatically align with the over-limit and adjacent guides, which is very useful in positioning the objects. Check the **Lock** box when some guide is selected, the selected guide will be locked, in this case, you cannot change its location.

The menu can determine whether to display the guides or not, and whether to enable the **Snap to Guides** function as follows:

- (1) Select **View > Guides > Show** to display or hide the guide;
- (2) Select **View > Guides > Snap to** to determine whether to enable the **Snap to Guides** function.

The above two menus are on-off menu. The mark activates the corresponding setup. And re-selection of the menu will delete the mark and deactivate the setup.

7.2.3 Snap to Object

Except the grid and guides, Founder SuperLine may also snap object(s) to other object(s). That is to say, when creating/moving objects and changing object size by the mouse, the cursor will be automatically drawn to the attractive points of nearby objects. The arrests points of different objects are also different. The attractive points of Bezier curve are all nodes. The attractive points of a line are the two end points and one midpoint. In this way, the objects may be easily aligned with the special points or sides of other objects.

To enable the **Snap to Object** function, select the **View > Snap to Object** command.

Note: *To facilitate the snapping operation, the cursor will point to the target location while you are moving the object by the mouse.*

7.2.4 Combined use of the three snap modes

Founder SuperLine supports three snap modes, i.e. snap to object, snap to grid and snap to guides. Any one snap mode or combined use of the three modes can orderly align the objects with the combined order from the object, guides to the grid. The above two menus are on-off menu. The mark activates the corresponding setup. And re-selection of the menu will delete the mark and deactivate the setup.

- **Snap to All**

Snap to All combines all three snap modes. When moved, the objects will be

placed in the order of snapping to object, guides and grid. In case the target object is near to another object, the two objects will get aligned. In case the target object is near to the grid, then the object will get aligned with the grid.

Select the **View > Snap to All** command in the menu to determine whether to enable all these three modes.

In case the setup is activated, there will be a mark in front of the **View > Grid > Snap to Grid**, **View > Guides > Snap to Guides** and **View > Snap to Object** commands.

- **Snap to Nothing**

Select **View > Snap to Nothing**, snapping operation will be disabled for objects being moved.

In case that these modes are disabled, there will be no “” marks in front of the **View > Grid > Snap to Grid**, **View > Guides > Snap to Guides** and **View > Snap to Object** commands.

7.3 Arrangement of the user interface

Founder SuperLine allows you to arrange the user interface as needed.

7.3.1 Display of tool or property windows, bars, or lines

As mentioned in Section 3.2, the user interface provides a lot of useful and helpful toolbars, property windows, and rulers, grid and guides. All of these tool or property windows, bars, or lines can be displayed or hided according to your need or interest.

To display or hide any of the toolbars, including the **Standard**, **Graph**, **Text**, **Align** and the **Zoom** toolbar, select or unselect corresponding command in the **Tool Bar** submenu under the **View** menu.

To display or hide any of the property windows, including the **Pathfinder**, **Layers**, **Object Panel** and the **Fill and Stroke** window, select or unselect corresponding command under the **Window** menu.

And to display or hide the rulers, grid and guides in the document window, select or unselect the **Rulers** command, the **Show** command in the **Grid** or **Guides** submenu, under the **View** menu.

Note: The Tick mark in front of the above menu commands will display the corresponding toolbars or windows or tools, otherwise will hide them. When selecting the above menus, the status of the corresponding toolbar will be switched over with adjustment to the size and location of the windows.

7.3.2 Simple Border

Founder SuperLine 4.60 adds a **Simple Border** command under the **View** menu. When this command is selected, SuperLine will display the outlines of all graphical objects in one-pixel resolution. In practice, you can make use of this command to display those objects that are not easily visible, such as objects using white borders or white fill effects.

7.3.3 Anchoring status of the toolbars

In the above windows, the toolbar windows have two display statuses, i.e. independent display status and anchoring status. In the independent display, each toolbar, like a window, has titles and movable in the screen. In the anchoring status, the toolbar can only be displayed at one side of the main interface close to the file window without the title. We take the **Standard** toolbar as an example.

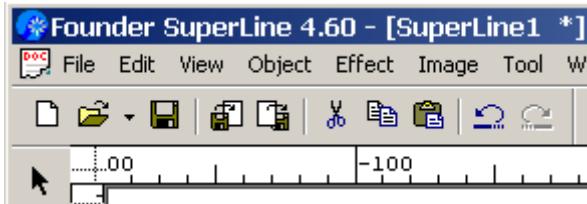


Figure 7-9

In the independent status, dragging the title to the sides of the main interface by holding the mouse will convert it to the anchoring status. In the anchoring status, dragging the toolbar to the center of the main interface by holding the mouse will convert it to the independent status.



Figure 7-10

7.3.4 Move ruler origin and select ruler unit

- **Move ruler origin**

By default, the coordinate of the SuperLine page has the origin at the lower left corner of the page with the horizontal right as the positive direction of X axis, and vertical up direction as the positive direction of Y axis.

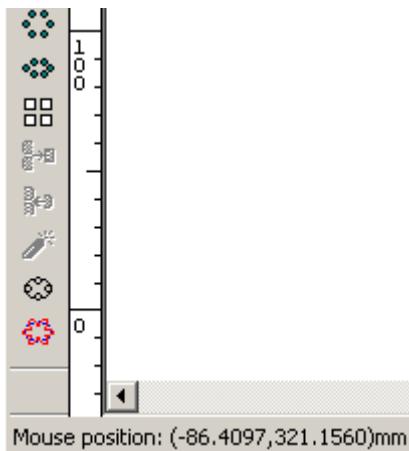


Figure 7-11

The values of the two rulers are determined by the coordinate. The ruler can move the origin of the coordinate, i.e. the origin of the ruler, by two methods:

- Move the cursor to the crossing points of the two rulers, click and drag it down, release the mouse, the ruler origin is located at the current place (as shown in figure below: the empty arrow representing the location where the mouse is pushed, and the empty arrow representing the dragging direction);

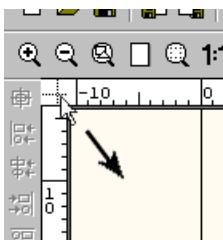


Figure 7-12

- Move the cursor to the crossing point of the two rulers, double-click, the ruler origin moves to the lower left corner of the page.

● Select ruler units

The ruler values have the length units with the default unit as mm. Follow the follow steps to change the ruler units:

- (1) Click at the upper left corner above the crossing point of the two rulers to pop up the menu;

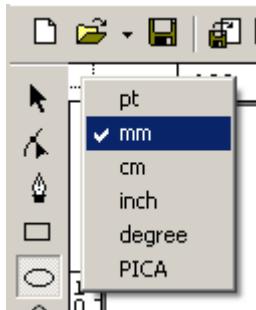


Figure 7-13

(2) Select the target units. The units in the menu include pound, mm, cm, inch, level and PICA.

7.3.5 Operation of Object Panel

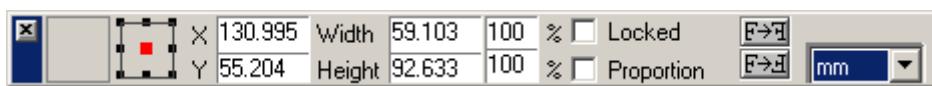


Figure 7-14

The **Object Panel** is a property window containing the parameters below:

- Trace the selected status of the objects, inform the user of the objects selected;
- Change the location and size of the selected objects (maintaining horizontal/vertical proportion);
- Make vertical or horizontal mirror of the selected object.

It is notable that multiple selected objects will be operated as a whole while maintaining the fixed relative locations of the objects.

- **Trace the selection status of the objects**

When a user selects an object on the page, double-click at the preview area of the panel to preview the selected object, making the user to know the selected objects and the following operations.

- **Modify the location and size of the selected objects**

Users may change the location and size of the objects by the reference point, position box, width/height box and proportion check box.

First select the units of the size and the location in the Unit list box of the panel.

The icon  represents the nine reference points of the object, i.e. upper left, middle left, lower left, upper right, middle right, lower right, upper middle, center and lower middle. The object position and size are determined by the values of the reference points and positioning box. Clicking the small diamond can change the reference point. For instance, the object center can serve as the reference point.

The position box X and Y determine the object position. Follow the steps below

to change the object position:

- (1) After inputting X or Y value in the position box;
- (2) Move the input focus to other options of the panel, or press the **Enter** key, or click the page, the object is moved, the reference point of the object will move to the place designated by the position box.

Note: *When changing the width and height of the object in the size or proportion boxes, the values in the position box remain the same. When changing the reference points, the values in the position box will be changed accordingly.*

The size box and proportion box are used to change the size of the object as follows:

- (1) Set up the absolute width or height in the **Width** box or the **Height** box, or input the proportion of width or height;
- (2) Move the input focus to other options of the panel, or press the **Enter** key, or click the page, the object size is changed with the reference point fixed.

Notes:

- ① *When changing the value in the **Proportion** box, the object size is changed with the value in the **Proportion** box restored to 100%.*
- ② *When selecting the **In Proportion** check box in the panel, the object size will be changed in proportion to maintain the original proportion of the object.*

- **Lock object**

When the **Lock** box is checked, the location of the object will be locked.

- **Select horizontal or vertical mirror of the object**

The rightmost two buttons in the panel represent Horizontal Mirror  and Vertical Mirror , respectively. Clicking the Horizontal Mirror or Vertical Mirror mirrors the object selected.

7.3.6 Status bar

There is a status bar at the bottom of the main interface of Founder SuperLine to display the current status of the selected object or node and the operation status.

As shown in the figure, the status bar consists of 6 parts. The first part will display the current cursor position. The second part will display the status of the selected object (selecting the objects and types). The third part is actually a progress bar. And the other three parts will display the status when pressing

down the **Caps Lock**, **Num Lock** and **Scroll Lock** keys.



Figure 7-15

- **Array and refresh document window**

Founder SuperLine is a multi-window application to support display or editing of multiple design documents. When more than one document window are opened, you can display all of them concurrently by selecting the **Tile Vertically**, or **Tile Horizontally** or **Cascade** command under the **Window** menu.

In addition, you can refresh the current window by using the **Refresh** command under the **View** menu.

7.4 Display Zoom

You need to display the page in appropriate proportion in the design. In Founder SuperLine, the page may be enlarged or reduced or remain normal. For examples, to improve the macro effect, the reduced display will center the page in the screen; to observe the local details, the enlarged display will display the target part in the screen. And the normal display will allow users to preview the actual effect. Founder SuperLine supports display in various proportions. You can display the zoom tools by checking **View > Tool Bar > Zoom**.



Figure 7-16

7.4.1 Zoom in

The magnified display may be realized by using the **Zoom** tool  in the **Graph** toolbar, or the **Zoom In** tool  in the **Zoom** toolbar.

- **Use the Zoom tool  in the Graph toolbar**

➤ Method 1

(1) Select the **Zoom** tool  in the **Graph** toolbar.

(2) Click and the display is doubled.

➤ Method 2

(1) Select the **Zoom** tool  in the **Graph** toolbar.

(2) Move the cursor to the appropriate position, click and drag the cursor in an angle, during which there is a red dashed rectangle, release the mouse at the target location, the part in the rectangle will be magnified on the screen.

The following figure shows the zoom in operation with the two magnifier icons representing the positions where the mouse is pressed and released.

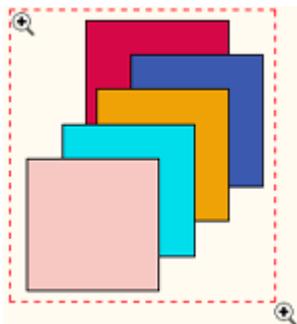


Figure 7-17

- **Use the Zoom In tool  in the Zoom toolbar**

Click the **Zoom In** tool  in the **Zoom** toolbar, and the display will be magnified by one fold.

7.4.2 Zoom out

The zoom out can be realized by using the **Zoom** tool  in the **Graph** toolbar and the **Zoom Out** tool  in the **Zoom** toolbar.

- **Use the Zoom tool  in the Graph toolbar**

Procedures:

- (1) Select the **Zoom** tool  in the **Graph** toolbar.
- (2) Press the **Shift** key and click, the display will be minified.

- **Use the Zoom Out tool  in the Zoom toolbar**

Click the **Zoom Out** tool  in the **Zoom** toolbar, the display will be minified.

7.4.3 Display selected object in Fit in Window manner

When displaying the selected object, a user may zoom or even move the display content, so as to improve the display effect of the selected object as good as possible. Use the **Selected Fit in Window** tool  in the **Zoom** toolbar as follows:

When the **Selected Fit in Window** tool  in the **Zoom** toolbar is clicked, the screen will display the selected object in a fit-in-window manner.

Note: *In case of no selected object, clicking the **Selected Fit in Window** tool  will pop up a message shown as follows. Click **OK** to close it.*



Figure 7-18

7.4.4 Fit in Page display

When the **Fit in Page** tool  in the **Zoom** toolbar is clicked, the screen will display all objects inside the current page fully in an appropriate proportion.

7.4.5 Fit in Window display

When the **Fit in Window** tool  in the **Zoom** toolbar is clicked, the screen will display objects of the current page (including inside and outside) in an appropriate proportion.

7.4.6 Accurate display

Founder SuperLine 4.60 provides you with **Accurate display** tool  in the **Graph** toolbar to accurately display your selected object. With this tool, you can easily represent the original display effect. But note that this manner may result in slower display speed.

To apply this tool, perform the following steps:

- (1) Select on the page the object you want to display accurately;
- (2) Check the **Accurate display** tool  in the **Graph** toolbar;
- (3) Click and drag your mouse to select a display area on the object, release the mouse as appropriate. The selected area will be displayed accurately.

You can cancel this display manner by pressing the F5 key.

Notes:

- ① Before you perform this operation, make sure that the object is selected first;
- ② This tool is only available to graphic objects, including group object, combined object and clip object.
- ③ The speed to display in this way clip objects that have objects embedded may be comparably slow.

7.4.7 Page preview

Founder SuperLine 4.60 allows you to preview the effect of the operations you perform while you are editing some parameters, providing lot of convenience for

your work.

In dialog boxes such as **Fill Line**, **Fill Curve**, **Relief on Line**, **Relief on Curve**, **Auto Lace**, **Rasterize**, **Multiplication**, **Array in Matrix** and **Wave Generator**, there is a **Preview** button, for example, as shown in the following figure. With this **Preview** button, you can preview the effect of the operations you just perform on the page, and easily make further operations based on the preview.

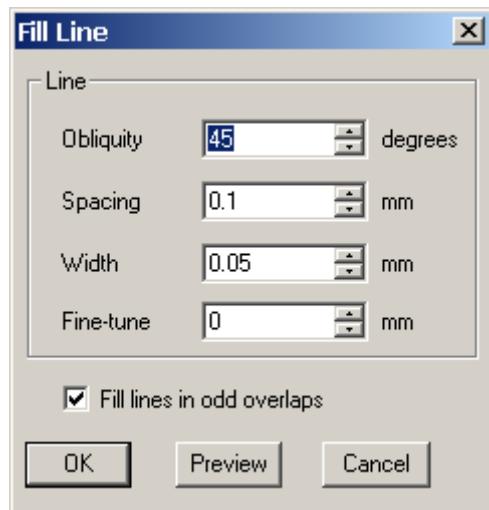


Figure 7-19

7.4.8 Restore former display proportion

In Founder SuperLine, the previous display proportions have been stored to restore the previous display proportions. This can be implemented by clicking the **Undo Zoom** tool  in the **Zoom** toolbar. For instance, if a page has been displayed for many times, in proportions of 100%, 67% and 200% successively, then by clicking the **Undo Zoom** tool, you can restore the display first to 67% and then 100%.

7.5 Global parameter configuration

The parameter configuration may set up some global parameters for Founder SuperLine, e.g. distance between new object and the previous object upon object paste, minimum accuracy of object trimming, times of deletion operations and etc. The desired configuration will greatly improve the efficiency.

The parameters will be set as follows:

- (1) Click **Edit > Options** to open the **Options** dialog box.

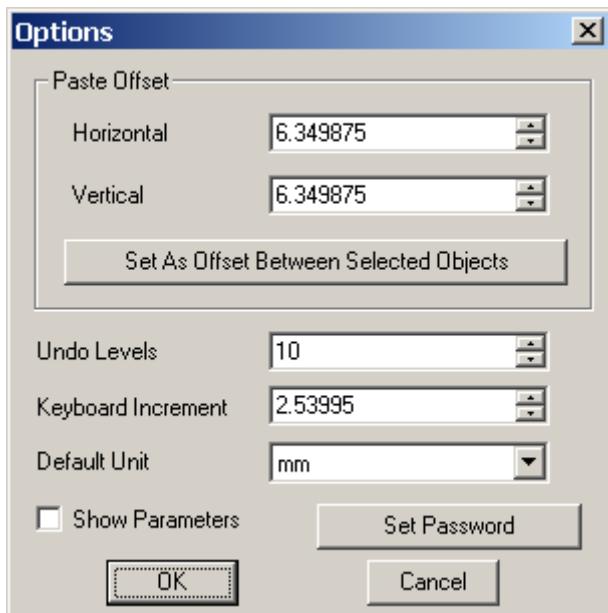


Figure 7-20

(2) Click **OK** after parameter configuration.

In the dialog box, the value of **Paste Offset** determines the relative positions of the new/old objects upon object paste. The **Horizontal** and **Vertical** represent the relative horizontal/vertical positions. Users may input the relative distances in two directions in the right edit boxes. The unit for the values you input can be selected in the **Default Unit** list box. The **Set As Offset Between Selected Objects** button will set the paste offset to the relative positions of the selected two objects. To do this, first select two objects, then click this button, and then select the target object for paste operation.

Keyboard Increment refers to the step in which the object is moved by the direction key of the keyboard. You may input appropriate value directly in the right box.

Undo Levels means the maximum steps of undoes. To set its value, you can input the undo levels in the right edit box, or change the value by the arrow at the side of the box.

Default Unit refers to the units of the values marked in the ruler.

Founder SuperLine 4.60 also enables you to save your edition or modification to the **Options** setup. When you check the **Show Parameters** box in the **Options** dialog box, SuperLine will pop up message asking you to input a password (if no password is set, it prompts that there is no password set). To better protect your setup, only after the password (if any) is correctly input, the user can then continue to view, modify and save the **Options** parameters for an object.

You can set or change your password in the **Setting user's password** dialog box, which can be opened by clicking the **Set Password** button in the **Options**

window.



Figure 7-21

When no password has been set, the Input old password box will be displayed in gray.

Note: *If the user wants to view detailed parameter settings for a particular object, he or she must select the object first, then open corresponding dialog box to show all related setups. As for objects that cannot be edited furthermore, the **OK** and **Preview** in some parameter setting dialog boxes may be displayed in gray.*

Chapter 8 Advanced Anti-counterfeit Operations of Graphics

The content in this chapter is closely related to the anti-counterfeit design. The anti-counterfeit design usually starts from designing a graphic unit, and then executes array using this unit to create the texture. Make changes or transformation to create the guilloche and lace based on this unit. Therefore, how to make an ideal graphic unit is fundamental for doing page design.

In this chapter, first we are going to introduce the fundamental and advanced procedures for unit design, and then introduce the graphic operation for making the effect of texture, lace and so on.

In a word, this chapter collects most contents related to graphic operations in Founder SuperLine. It is one of the most important chapters.

8.1 The fundamentals of graphic unit design and reshape

If we simply apply drawing operation discussed in Chapter 4 to create the graphic unit, it is very hard to create fine and nice graphics. In this session, we introduce some new operations, such as combining multiple graphics into one, dividing a complicate graphic, creating symmetrical graphics, making dividable and clipped graphics, and reversing the direction of a curve. We can use these functions to design an ideal graphic as the base for the further design.

8.1.1 Combine and divide graphics

Combine is to turn multiple graphics into a new graphic object (but not a group object), and the new graphic object has the same filling color and outline properties as the original selected one. After Combine, all the original independent objects are not existent any more and become the sub paths of the new object. Combine is to turn multiple graphics into one and reshape.

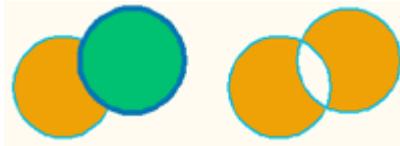


Figure 8-1

To combine graphics:

- 1) Select a couple of graphics from the page;
- 2) Select **Object > Combine** in the menu.

After this, the objects become a new graphic object. It has the same filling color and outline properties as the very first selected graphic.

Notes:

- ① *If there are circle, ellipse, polygon (include rectangle), and sine curve in the selected object, these graphics cannot be combined. Only after convert them to curve, they can combine with other graphics.*
- ② *If select multiple objects, other objects like group object and clip-mask object do not combine, but only combine those graphics which can be combined.*

Divide is to divide the sub paths of the object and create new individual objects respectively. The new object has the same properties and filling color as the original one.

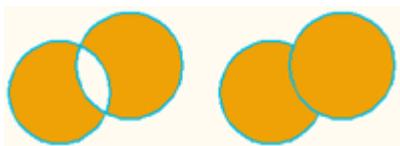


Figure 8-2

The detailed procedures are as follows.

- 1) Select a graphic object with sub paths (one or more).
- 2) Select **Object > Release Combination** in the menu.

Note: *If select multiple objects, only those objects with sub paths can be divided. Other objects such as group object, clip-mask object and graphic object with single path and so on will not change.*

Combine and **Group** have a lot of similarities and can cause confusion.

However, these two methods are totally different. **Group** and **Ungroup** do not change the properties of the original object (filling and outline properties), and can be applied to two objects of any kinds (such as graphic, text, group object, clip object); **Combine** may change the characteristics of the original object (filling and outline properties), and can only be used for graphic object.

8.1.2 Open Curve Mirror

The symmetric graphics look neat and nice, which are always used in the design. SuperLine provides a convenient approach for design a symmetric graphic, the **Open Curve Mirror**.

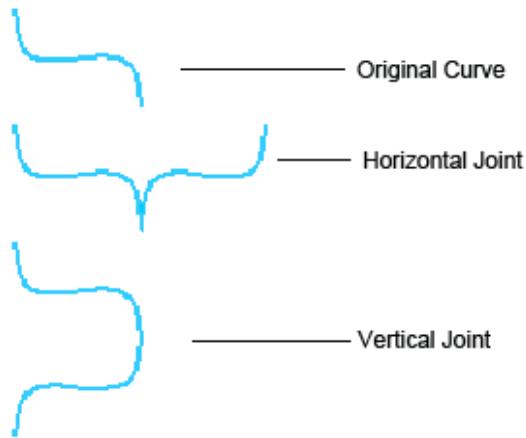


Figure 8-3

Open curve mirror, is to make a copy of a curve as the mirror of the original curve. Moreover, the relative position between the original and the new curve are set, where the end point of the original curve is the start point of the new curve.

To make open curve mirror:

- 1) Select the graphic object.
- 2) Open **Object** > **Open Curve Mirror** in the menu, and select an appropriate option.



Figure 8-4

- **Horizontal Joint** is to create the horizontal mirror for the curve and join it with the original curve to make one curve.
- **No Horizontal Joint** is to create the horizontal mirror for the curve and but not join it with the original curve.
- **Vertical Joint** is to create the vertical mirror for the curve and join it with the original curve to make one curve.
- **No Vertical Joint** is to create the vertical mirror for the curve but not join it with the original curve.

Notes:

① To make the Open Curve Mirror, it is required that there is at least one graphic or group object in the selected object (one or more) that has no less than one open path. The end point of the open path is taken as the axis of the mirror, and all other close paths or graphic objects use it as their mirror axis. If there are more than one open paths in the selected object, all other close paths or graphic objects use the right-most (up-most) end points of all open paths as the horizontal (vertical) mirror axis.

② If there are more than one graphic objects in the selected objects, they become group objects after being mirrored.

③ If there is clip-mask object in the selected objects, the clip-mask object will be mirrored and the clipped content will disappear.

④ The mirror effect is related to the direction of the path. Therefore, it is important to change the direction of the curve if necessary (refer to the following section).

We can say that Open Curve Mirror aims at open paths, and does not do much for close paths. Open Curve Mirror is also different from the mirror for ordinary object in Chapter 3.

8.1.3 Reverse direction of graphics

Reverse direction is mainly used for Bezier curves. In SuperLine, curves have directions. Reverse direction means to change the direction of the curve from the start point to the end point. If the order of points from the beginning to the end of one Bezier curve is: P1, P2, P3, ... Pn-1, Pn, after reverse direction, the order of the points from the beginning to the end are Pn, Pn-1, P3, P2, P1. After reverse the direction, the shape of the curve is unchanged.

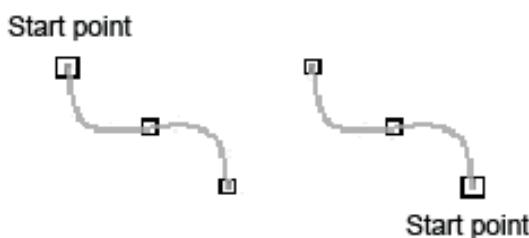


Figure 8-5

The approach for reversing direction is as follows.

- 1) Select the graphic object (one or more).
- 2) Select **Object > Reverse** in the menu.

Notes:

① We cannot reverse directions for circle, ellipse, polygon and sine curve. However, we can convert them to curves first, and then reverse their directions.

② If multiple objects are selected, we only reverse those curve graphics and keep other objects unchanged (such as group object, clip object and circle, etc.).

③ After reverse directions, the shape is unchanged. We can use **Node Editor** tool in the **Graph** toolbar to view the effect after reverse.

8.1.4 Path operations

Path Operation refers to operate on two crossed intersecting lines to create new path by **Unite**, **Intersect**, **Exclude**, **Minus Front**, **Minus Back**, **Divide**, or **Outline** operations. The results of doing operations on two intersecting ellipses are shown in the following figure.

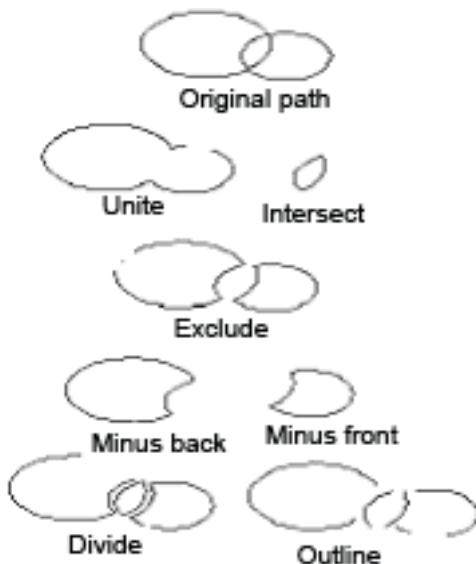


Figure 8-6

The detailed procedures are shown as follows.

- 1) Select two intersecting paths.
- 2) Select **Object > Pathfinder > Unite (Intersect, Exclude, Minus Front, Minus Back, Divide, or Outline)** to get the corresponding results.
 - **Unite** is to take the periphery part of the two combined curves.
 - **Intersect** is to take the common part of the two curves and delete the non-overlapped part.
 - **Exclude** is to take the non-overlapped part of the two curves and delete the common part.

- **Minus Front** is to use the rear curve to subtract the front curve according to the folded order
- **Minus Back** is to use the front curve to subtract the rear curve according to the folded order
- **Divide** is to divide the two curves into multiple curves according to the intersection of the two curves.
- **Break Apart** is to divide the parts surrounded by the two curves into multiple closed areas.

Notes:

- ① *The two paths used for path operations must be intersected.*
- ② *After doing **Exclude** and **Break Apart** operations, we need to apply **Ungroup** command to view the effect. After **Divide** operation, we need to use **Release Combination** command.*
- ③ *If the graphic units for doing path operations are not closed, use a line to connect its start and end points automatically to make a closed graphic unit.*

Path operations may also be done in the **Pathfinder** window. The method is as follows.

- 1) Select the two-intersecting paths at the same time.
- 2) Select **Windows > Pathfinder** in the menu. Click the corresponding button to do the required operation in the **Pathfinder** window.



Figure 8-7

8.1.5 Clip object

Clip Object is mainly for graphic objects. It uses a path (Clipping Object) to cut the unnecessary part of other graphic object (Clipped Object). The effect is shown in the graphic.

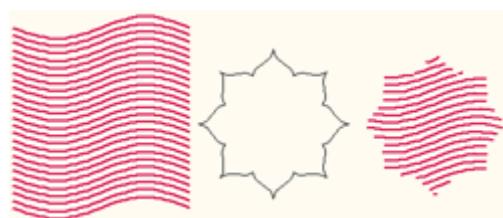


Figure 8-8

We can see that after clipping the shape of the clipped object has made essential change, which can be recovered only by **Undo** the operation. This is totally different from putting the object in the clip-mask.

The method for clipping is as follows.

- 1) Select the graphic object for clip (one or more).
- 2) If the **Clip** dialog box has not opened yet, select **Effect > Clip** to open this dialog box.



Figure 8-9

- 3) Click **Path** button  in dialog box, and move the mouse to the page. The cursor changes to a curved arrow . When the cursor moves to the path object, click this path and select it as the clip path (If there is no valid path at the clicked place, a message box pops up. Click **OK** and the cursor is still a curved arrow. Click the path again. If choose **Cancel**, the cursor recovers to normal state which means it cannot be used for selecting path.). The **Path** button in the dialog box turns to black.



Figure 8-10

- 4) Click **the Path for Clipping** button in the **Clip** dialog box and move the cursor to the page. The cursor turns to a big black arrow . Move the cursor to the part that needs to be cut, and click. The selected object is cut along the path. At the same time, the **Clip** dialog box restores.

If select the **Keep Closed Line** check box in the **Clip** dialog box, the closed graphic keeps closed after cut and the open graphic will not be affected.

Notes:

- ① When selecting **the Path for Clipping**, if the Clip path is closed, select the outer or inner part of the path; If the path is open, select the right or left side of the path.

- ② *Clip has no effect on graphics.*
- ③ *For big refraction object (especially big graphic refraction object) we need to apply Clip carefully. Because it may take a lot of time for this operation, the data can be incremented significantly, which may result in using up the system resource and system crash.*
- ④ *The selected clip object can be one or more objects, group objects or text (which needs to convert to curves first). For multiple objects, only the object being cut participates in operation. If a group object is selected, the graphic in the group cannot be cut.*
- ⑤ *Clip path object can only be a single open or closed path. If the text that has been converted to curves is a continuous graphic, it may also be a Clip path object as shown in the graphic.*

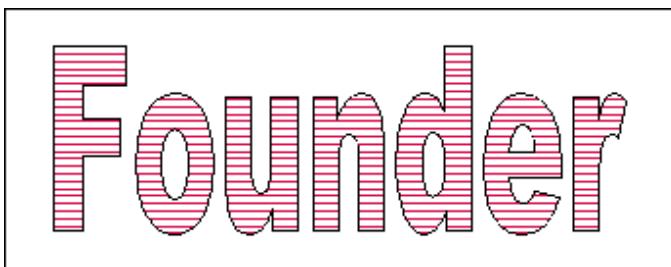


Figure 8-11

8.1.6 Array along curve

Array along Curve command is used for dividing a curve to create the required control points on this curve, in order to further control its operation.

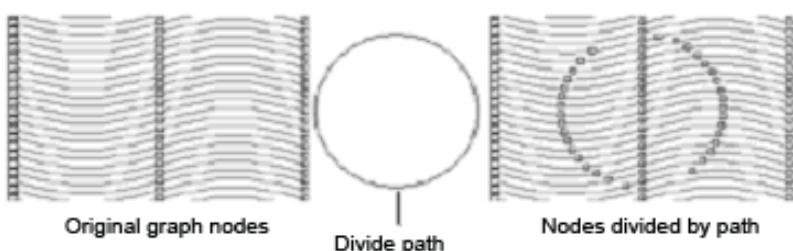


Figure 8-12

The procedures are as follows.

- 1) Select the object to be divided.
- 2) Select **Effect > Array along curve**, and then the cursor turns to a curved arrow ↗. Use the mouse to click the path. The intersection of the selected object and the path forms the divide node (which can be viewed by the **Node Editor** tool) for further reshape.

When use the curved arrow ↗ to click the path, if the object is not selected,

SuperLine pops up a message box. Click the **OK** button, we can reselect the graphic; if the continuous graphic is not selected, SuperLine also pops up a message box and we can click the **OK** button.

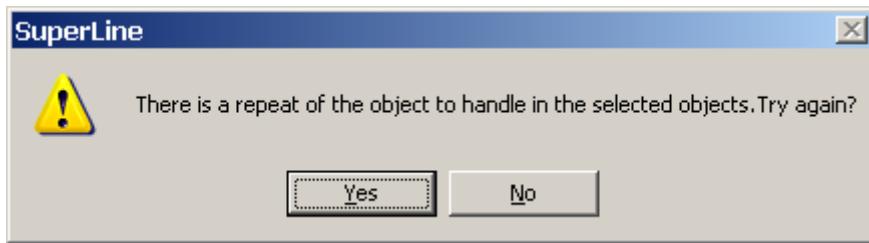


Figure 8-13

Notes:

- ① *The object to be divided cannot be a graphic.*
- ② *The selected object can be one or more objects, group objects or text (which should be turned to a curve first). For multiple objects, each object is divided separately. For group objects, it turns to a graphic object after it is divided.*
- ③ **Divide** should be a continuous path, so we can select a graphic with a single path.

8.2 Powerful graphic unit design tool

Compared with the last session, the graphic operation introduced in this session is much more complicated and is more suitable for unit design. The operation in this session is mainly based on the previous introduction. After making graphic reshape, we will change and repeat the graphic in a small area to form a new unit. Combine multiple units, and the anti-counterfeit design is made.

The main operation in this session includes **Distort along Curve**, **Blend**, **Contour**, **Envelope Distort**, and **Fill Curve**, which are used frequently.

8.2.1 Distort along Curve

Distort along Curve is to transform a graphic object (non-closed) along a curve (open or closed curve) and form a continuous graphic. The effect of Distort along Curve is shown in the graphic below.

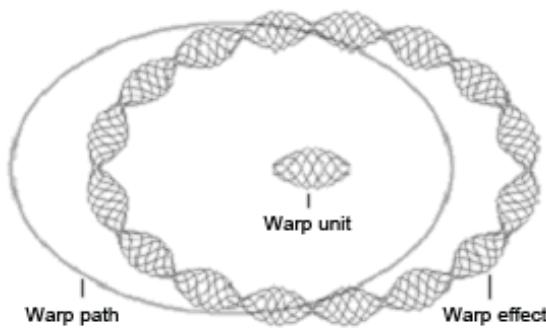


Figure 8-14

The procedure for transform along the curve is as follows.

- 1) If the **Distort along Curve** dialog box is not open, select **Effect > Distort along Curve** and the **Distort along Curve** dialog box pops up.

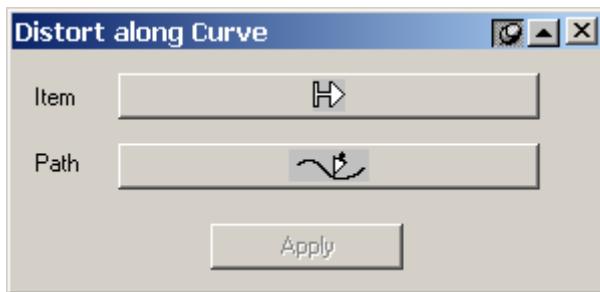


Figure 8-15

- 2) Click the **Item** button . The cursor turns to a horizontal arrow . Use this cursor to click the unit for Distort along Curve (Item), and the **Item** button turns to black in the dialog box.
- 3) Click **Path** button . The cursor turns to a curved arrow . Use this cursor to click the transform path, and the **Path** button turns to black in the dialog box.
- 4) After select item and path, **Apply** is activated. Click this button, item will be transformed along the path.

When click the item and path, if no object is selected, SuperLine pops up a message box. When click the item, if the selected object is not suitable (for example, there is no open sub path), the Item button will not turn black. It is required to select other objects as the item.

Notes:

- ① *Path can be an ordinary graphic object, group object (with graphic object or text object inside), and text object. If there are two sub paths in the graphic, do transform respectively. If the path is text, we need to convert it to a graphic first and then use it for transform path. Although a text can be used as transform path, the transform effect is unpredictable due to the complexity of the path.*
- ② *The Item used as transform unit must be a graphic object with an open sub*

path, or a group object with an open curve. During transform, only the item with an open curve is transformed and repeated. The closed path cannot be repeated, but can be transformed.

8.2.2 Blend

Blend is to create a series of graphics to reflect the transformation process from one graphic to another. Blend can produce nice visual effect, which is suitable for the anti-counterfeit design. This is shown in the graphic.

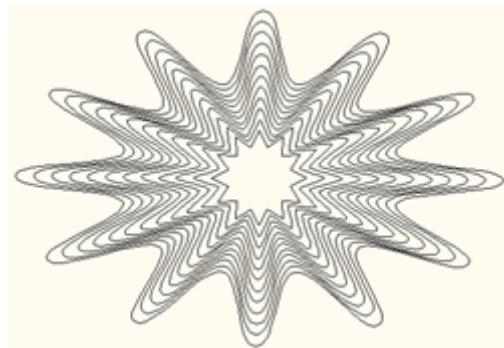


Figure 8-16

The detailed procedure is as follows.

- 1) If Blend dialog box is not open, select **Effect > Blend** in the menu. The **Blend** dialog box pops up.

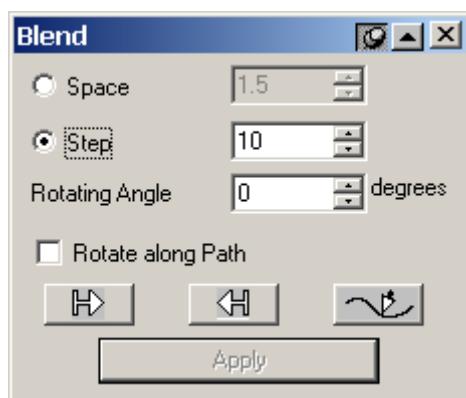


Figure 8-17

- 2) Set blend parameters in the **Blend** dialog box.

- **Space:** refers to the minimum space among curves in the curve group generated by Blend. When this parameter is selected, you can input a value directly in the right box, or click the small arrow aside to select a value.
- **Step:** refers to the number of intermediate graphics created during mixing. Inputting values directly or press the small arrow aside can

adjust it. The bigger the steps, the denser of the curve distribution is.

- **Rotation Angle:** It is the rotation angle of the last graphic after mixing if the Blend is invalid. The rotation angle of the first graphic created is 0, and that of the last graphic is set to s . The rotation angle of all other graphics increases by degrees of s/n (n is the steps). Inputting values directly or press the small arrow aside can adjust the value of s .

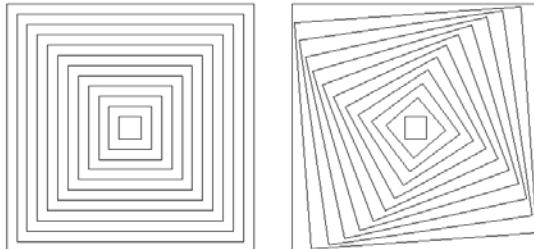


Figure 8-18

- 3) Click the **Start Object** button . The cursor changes to horizontal arrow pointing to right . Use this cursor to click the start object for blending.
- 4) Click the **End Object** button . The cursor changes to horizontal arrow pointing to left . Use this cursor to click the end object for blending.
- 5) If we want to mix along the path, click the **Path** button . The cursor changes to a curved arrow . Use this cursor to click the blended path object.

After appoint the mixed path, the graphics created by mixing are uniformly distributed along the path. Otherwise, the graphics created by mixing are uniformly distributed between the start object and the end object.

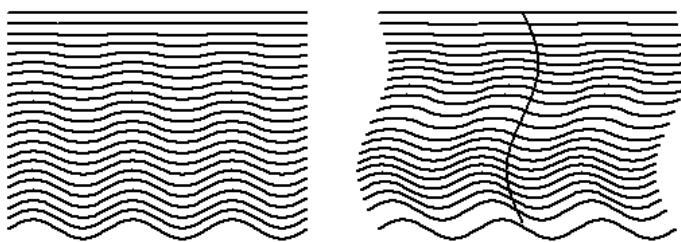


Figure 8-19

- 6) If select the mixed path, the **Rotate along Path** check box is valid. If select this check box, the created graphic rotates along the appointed path.

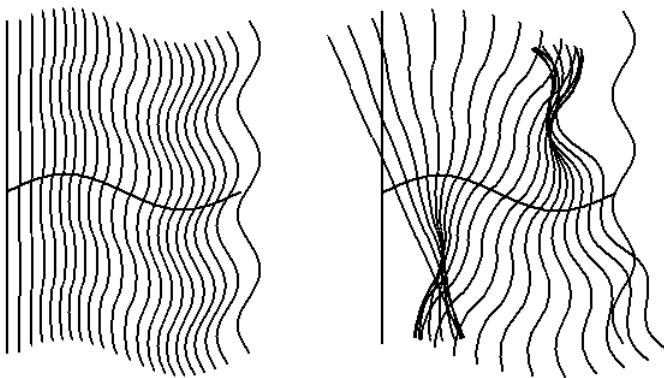


Figure 8-20

7) Click **Apply** in the dialog box, the **Blend** is created.

The effect of Blend is related to the start point of the curve, the direction of the curve and the number of control points. The user can use the Node Editor Tool to change the number of the control points, and change the direction of the curve by reversing the curve.

When click the **Start Object**, **End Object** and the **Path**, if the object is not selected, SuperLine pops up the message box.

Notes:

① *The start object and end object can be graphic object, text or group object. If it is text, we need to convert it to curves and then mix. If it is group objects, there must be objects like graphic or text that can be mixed in the group, which are path.*

② *The path can be a graphic object, text and group object. If the path is text, we need to convert it to a graphic first and then use it for transform path. In case of the group object, there will be objects (graphics and text) that can participate in the mix in the group. These objects are all paths.*

8.2.3 Contour

With the **Contour** function, we can create a group of curves that are isometric with each point on the selected graphic. The effect is shown in the graphic.

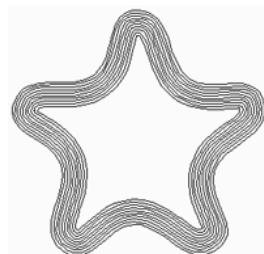


Figure 8-21

The detailed procedure is as follows.

- 1) Select the object as the base object for making isometric line.
- 2) If the **Contour** dialog box is not open, select **Effect > Contour** and the **Contour** dialog box pops up.

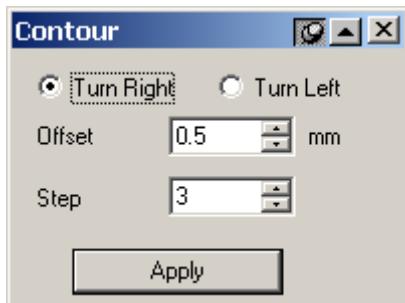


Figure 8-22

- 3) Set parameters in the **Contour** dialog box.

- **Direction:** The round buttons **Turn Left** and **Turn Right** determines the isometric line is created in which side of the graphic. For a curve, assume that one person walks along the curve's direction, and his or her left side is the curve's left side and the right side is the curve's right side.
- **Offset:** In the process of make isometric transform, the bigger the offset distance between the two adjacent isometric lines, the isometric line is sparser.
- **Step:** It is the number of created isometric lines.

- 4) Click **Apply** in the dialog box, and the isometric lines are created. Group them.

Notes:

- ① We can select the following objects as base objects for creating the isometric lines, such as graphic object, text, group object, and multiple objects. If select graphic object, the base object is each sub path for creating the isometric lines. If select group objects, there must be graphic or object in the group, which becomes the base object for creating the isometric lines. If select multiple objects, just like selecting group objects, the selected graphic or text is the base object for creating the isometric lines.
- ② If we cannot create the assigned number of isometric lines due to the limitation of the size of the object, we try to create isometric lines as many as possible.
- ③ If the operation of creating isometric lines is invalid because the offset value is set too big sometimes, the user can solve this problem by reducing the offset value or adjusting the direction (To Left or To Right).

8.2.4 Envelope Distort

Envelope Distort means one graphic transform along an assigned outline. **Envelope Distort** can create wonderful transform effect, and is often used in the anti-counterfeit design. The effect of one **Envelope Distort** is shown in the figure below.

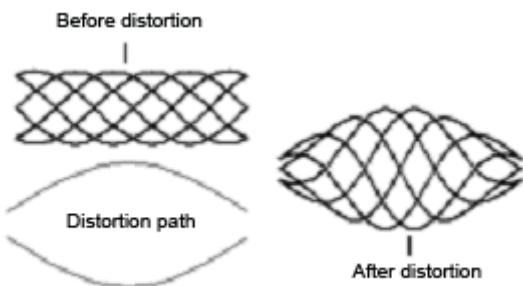


Figure 8-23

The procedure for Envelope Distort is as follows.

- 1) Select the graphic object and the group objects (group objects are graphic objects).
- 2) If the **Envelope Distort** dialog box is not open, select **Effect > Envelope Distort**. The **Envelope Distort** dialog box pops up.

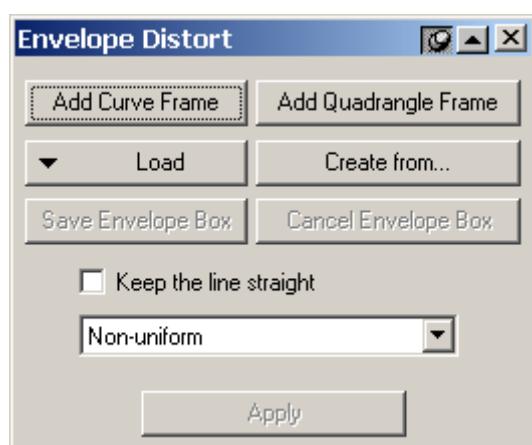


Figure 8-24

- 3) Set the distort parameters in the dialog box.

Select the **Keep the line straight** check box, and then the line part of the graphic keeps line during transform. Select a uniform option (Non-uniform, or Uniform relatively, or Uniform absolutely) from the dropdown list, and it will try to make the Distorting Distortion path distribution of the graphic as you selected.

- 4) Create the Envelope frame.

There are a couple of methods for creating the envelope frame.

- Press the **Add Curve Frame** button in the dialog box, and create an envelope frame around the selected object (The envelope transform frame can be red dotted lines with nodes. A furcated node has four base nodes. A frame-like node is an ordinary node. A round node with furcation inside is the start node. The effect of transform is related to the distribution of the four furcated nodes).

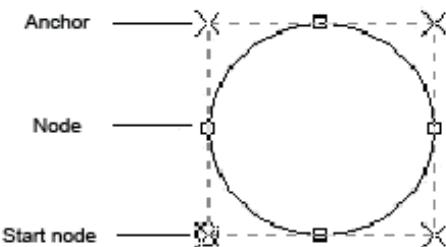


Figure 8-25

- Press **Add Quadrangle Frame** in the dialog box, and create a quadrangle frame around the selected object.

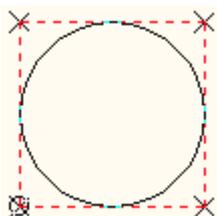


Figure 8-26

- Press **Load** in the dialog box, and the envelope dialog box pops up. Double-click the envelope frame in the dialog box, and create an envelope transform frame around the selected object.

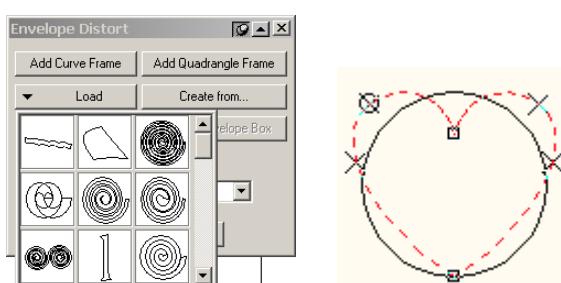


Figure 8-27

- Press **Create From** in the dialog box, and the cursor turns to a big black arrow. Use the mouse to click the graphic as the envelope frame in the page to create the envelope transform frame (the envelope frame shows at the clicked graphic).

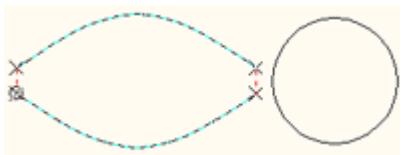


Figure 8-28

If selected graphic is a single closed path, we need to set anchor point as follows. Open the **Node Editor** window, and select one node in the graphic. Click the **Anchor** button  in the **Node Editor** window to set this node as the anchor point.

Apply the same methods to set another three nodes.

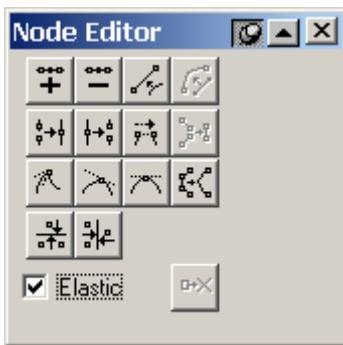


Figure 8-29

5) Adjust the envelope frame

After the envelope frame is created, we can adjust it (if we don't need to adjust it, press **Apply** to do transform). The method of adjusting envelope frame and that of adjusting the shape of the graphic using Node Editor tool are the same, as well as move nodes and control points, add and delete nodes, and change the properties of the nodes. All these can refer to Section 4.4.

6) Create Transform Effect

After a satisfied envelope frame is created, press **Apply** in the dialog box. The selected object transform based on the shape of the envelope frame.

If the user is not satisfied with the transform effect, select **Node Editor** tool in the **Graph** toolbar. After adjust the envelope frame, and then press **Apply**.

If the transform effect is good, press **Cancel Envelope Box** in the dialog box. The Envelope Frame disappears and the transform effect is saved. In this case, the user cannot do transform again by using the method of adjusting envelope frame, but to create a new envelope frame.

If the user wants to save the current envelope frame of the object for other objects, press **Save Envelope Box** in the dialog box. The Envelope Frame is saved in the Reserved Envelope Frame (Press **Load**, which can be found at the end).

Notes:

- ① For Envelope Distort, only one graphic object or a group object (the group object is the graphic object) can be selected.
- ② For creating the envelope frame from a graphic, the user only can select a closed path or an object with two open paths as the envelope frame object. Such objects include a graphic object (with only one closed path or two open sub paths), or a group object (with only two graphic objects, and each graphic has only one open sun path).
- ③ To apply a single closed path object as the envelope frame, four anchor points should be set. If the positions of anchor points are not set right, click Apply in the Envelope Distort dialog box. A dialog box pops up as shown in the graphic. Click OK and then reset the anchor points.
- ④ The effect of Envelope Distort has relationship with the direction of the path in the envelope frame. If the connection lines between the four furcated nodes are crossed, the effect of transform can be very odd. In this case, reverse one direction of the path in the envelope frame, and then do envelope transform.

8.2.5 Fill Curve

Fill Curve is to fill an area using curves (unit). Fill Curve is the most fascinating operation. The effect of Fill Curve is shown in the graphic. Isn't it very attractive?

Fill Curve is absolutely necessary in the anti-counterfeit design.

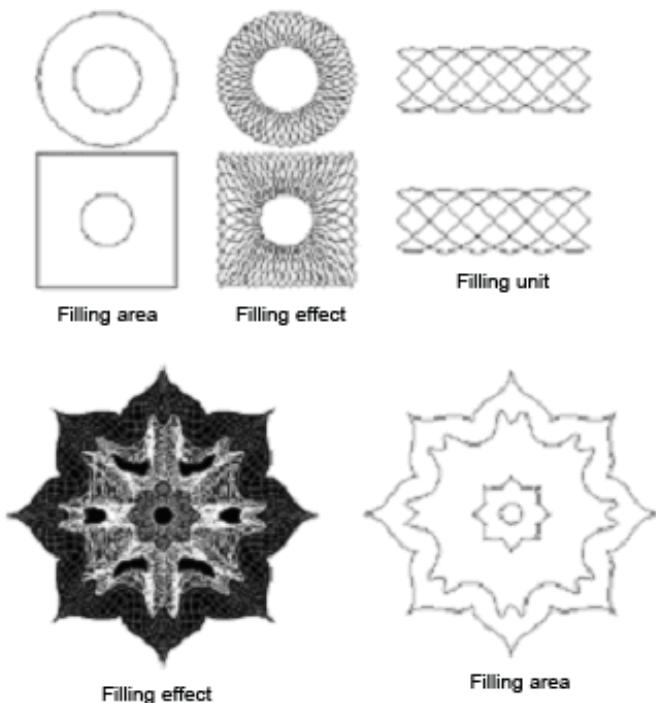


Figure 8-30

The procedure for Fill Curve is as follows.

- 1) If the **Fill Curve** dialog box is not opened, select **Effect > Fill Curve** in the menu. It is displayed as follows.

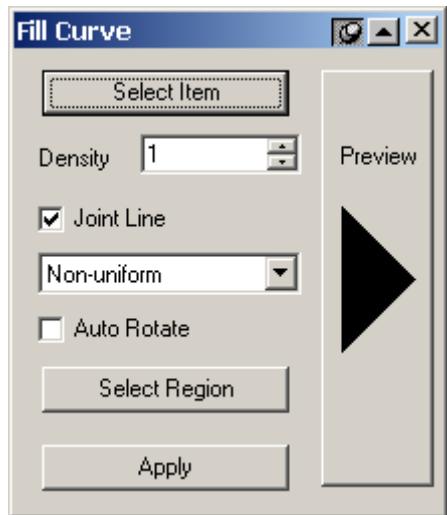


Figure 8-31

- 2) Select filling parameters in the dialog box.

Density means the repeated times in the filling area. The bigger it is, the denser the unit distribution is. The **Joint Lines** option enables you to get a better effect. The uniform options, including **Non-uniform**, **Uniform relatively** and **Uniform absolutely**, allows you to select a uniform degree of the distribution of the filling graphics. And when the **Auto Rotate** option is checked, the filling graphic rotates according to the change of the filling area.

- 3) Click **Select Item** in the dialog box. The cursor turns to a big black arrow ➡. Move the cursor to the page, click the graphic object as the filling unit.
- 4) Click **Select Region** in the dialog box. The cursor turns to a big black arrow ➡. Move the cursor to the page, click the graphic object as the filling area.
- 5) If the triangle arrow in **Preview** points to right, click this button to open the filling preview in the dialog box. Otherwise, click this button to close the preview.

If the **Auto Redraw** check box is selected when open the preview, the preview changes automatically when the filling parameters (such as **Density**) change.

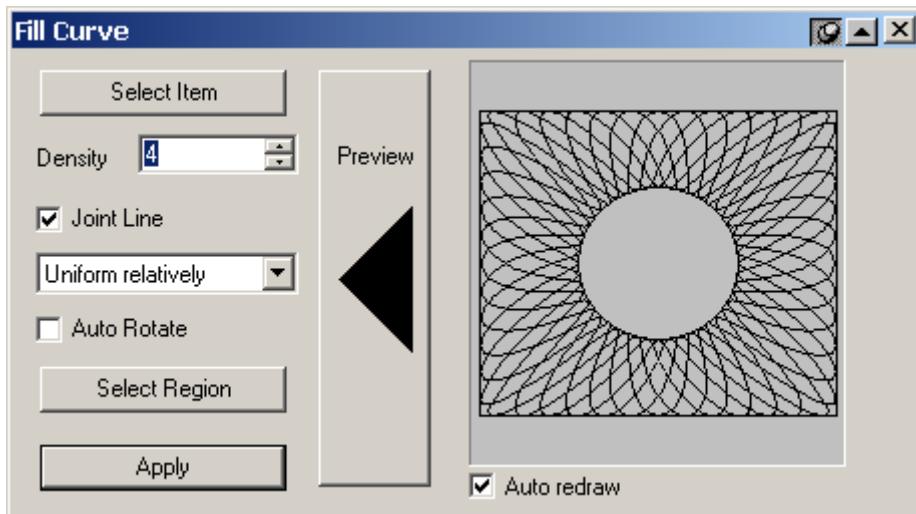


Figure 8-32

6) If the user is satisfied with the selected parameters, click **Apply** in the dialog box and filling effect is created.

Notes:

- ① *The filling unit and filling area only can be one graphic object or group object (the group objects are graphic objects). Moreover, the object as filling area only can have two closed sub paths. This means that if the filling area is a graphic object it must contain two closed sun paths and if it is a group object it must have two graphic objects and each object has only one closed path. If the selected area does not meet this requirement, SuperLine pops up a message box.*
- ② *If there is unclosed graphic in the filling unit, it uses the filling graphic created from this graphic to fill.*

8.3 A powerful texture design tool – Array

Usually there is texture in the anti-counterfeit design, which is made by repeating the unit. This session will introduce the Copy operation in the SuperLine. These operations are not limited for designing the texture; instead, they can be used in many cases, which is all up to the designer.

SuperLine has many different copy methods, such as **Multicopy** (repeat multiple units for one time and allow the change between the units), **Array around Circle**, **Array around Ellipse**, **Array in Matrix**, **Array along Curve** and **Array Text along Curve**. All these approaches can fully show the designer's artist level.

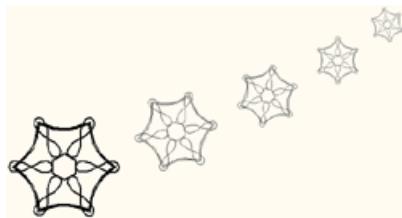


Figure 8-33

8.3.1 Multicopy

Multicopy is to copy multiple objects and allows the copied objects to vary in size, position, line width, color and direction, etc. The pattern created by **Multicopy** is shown in the graphic below.

The procedure is as follows.

- 1) Select the object for copy (one or more).
- 2) Select the **Multicopy** tool  in the **Graph** toolbar, and the **Multicopy** dialog box pops up.

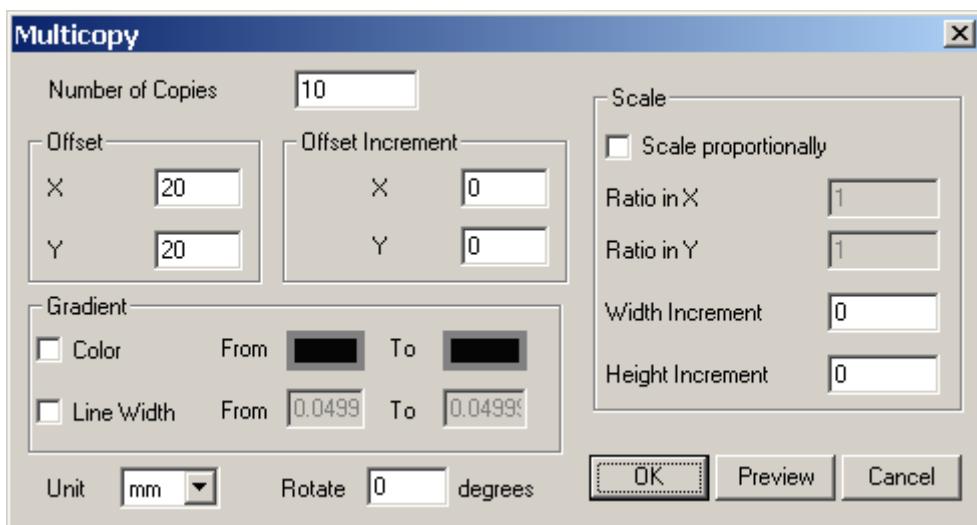


Figure 8-34

- 3) Set copy options in the dialog box.

- **Number of Copies:** It means to make how many copies for the current selected object (or object group).
- **Offset:** It is the difference of the two coordinates between two copied adjacent objects. X and Y refer to the horizontal and vertical difference respectively. Values in the two boxes can be positive or negative. When it is positive, offset to right or up. When it is negative, offset to left or down.
- **Offset Increment:** It is the difference between the coordinate offset of the current copied object and the previous copied object, and that of the

next copied object and the current object. X and Y refer to the horizontal and vertical difference respectively. Values in the two boxes can be positive or negative. When it is positive, the offset increases. When it is negative, the offset decreases.

For example, assume that the offset is set to dx and dy, the offset increment is set to ddx and ddy, and the coordinate of the center is (x, y). Then the coordinate of the first copied object will be (x+dx, y+dy), and that of the second is (x+dx+dx+ddx, y+dy+dy+ddy) and that of the fourth object is (x+dx+dx+dx+ddx+ddx+ddx, y+dy+dy+dy+ddy+ddy+ddy)...

- **Gradient:** It refers to the change of the outline color and line width of the copied object. Check the **Color** option and the outline color of the copied object may change. Click the **From** and **To** buttons respectively. The **Color** dialog box pops up. Select the outline color of the first and the last copied object. The outline colors of all other objects are the uniform change between these two colors. Select the **Line Width** check box and the outline width of the checked box may change. Input the outline width of the first and last copied object. The outline width of the all other objects is the uniform change between these two widths.
- **Unit:** refers to the unit for Offset and Offset Increment values.
- **Rotation:** It refers to the relative rotation angle between the two adjacent copied objects. It can be positive or negative. When it is positive, rotate counterclockwise. When it is negative, rotate clockwise.
- **Scale:** It determines the size change of the copied object. When the **Scale proportionately** option is checked, the vertical and horizontal proportions keep when the size of the object changes. The edit boxes of the **Ratio in X** and **Ratio in Y** are activated. **Ratio in X** is the horizontal proportion between the two adjacent copied objects. **Ratio in Y** is the vertical proportion. If the value is greater than 1, it refers to zoom in. **Width Increment** is the horizontal difference between the two adjacent copied objects. If it is positive, zoom in. **Height Increment** is the vertical difference between the two adjacent copied objects. If it is positive, zoom in.

4) When you complete the setting, click **OK**. The selected object is copied.

8.3.2 Array around Circle

Just as its name implies, **Array around Circle** is to make the selected object array long a circle. It is another kind of copy. **Array around Circle** creates the pattern shown in the graphic.

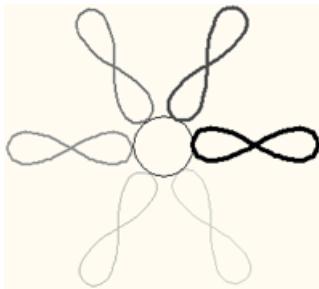


Figure 8-35

The procedure for **Array around Circle** is as follows.

- 1) Select the object to be copied (one or more).
- 2) Click **Array around Circle** tool  in the **Graph** toolbar to open the **Array around Circle** dialog box.

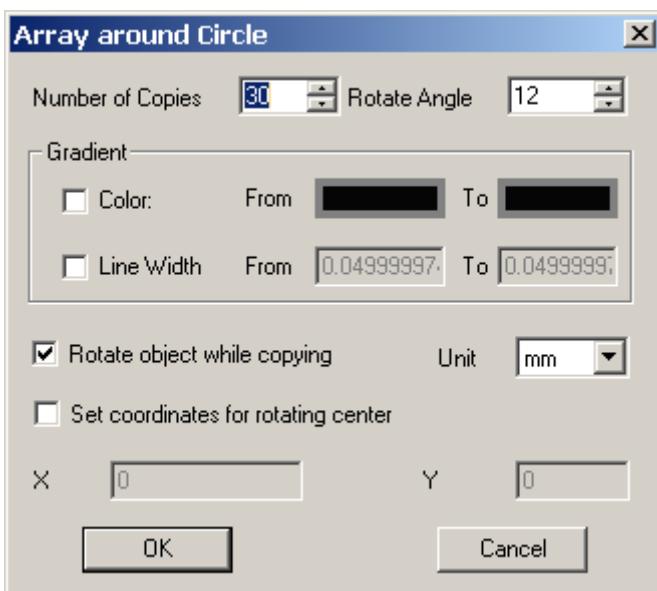


Figure 8-36

- 3) Set copy options in the dialog box.

- **Number of Copies:** It refers how many copies for the selected object or group object.
- **Rotate Angle:** If the **Rotate object while copying** option in the below is selected, it refers to the relative rotate angle between the assigned two adjacent objects. It can be positive or negative. If it is positive, it rotates counterclockwise. If it is negative, it rotates clockwise.
- **Gradient:** It refers to the change of the outline color and line width of the copied object. Check the **Color** option and the outline color of the copied object may change. Click the **From** and **To** buttons respectively. The **Color** dialog box pops up. Select the outline color of the first and the last copied object. The outline colors of all other objects are the uniform change between these two colors. Select the **Line Width** check

box and the outline width of the checked box may change. Input the outline width of the first and last copied object in the **From** and **To** value boxes respectively.. The outline width of the all other objects is the uniform change between these two widths.

- **Rotate object while copying:** When this option is checked, the object rotates while it is copied.
- **Set coordinates for rotating center:** When this option is checked, you can assign the rotate center in value boxes of the X and Y boxes. It is the center of a circle and the object is arrayed along this circle. By default, the value in the X and Y boxes is the center of the selected object. In this way, it is very convenient to design a pattern copied along its own center.

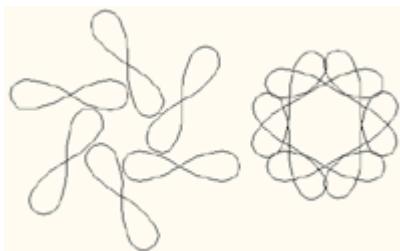


Figure 8-37

4) When you complete the setting, click **OK**. If the **Set coordinates for rotating center** box is checked, the selected object is copied directly. Otherwise, the cursor turns to a big black arrow ➡. Click the mouse in the page. The clicked area is a round circle, and the selected object array along this circle.

Note: *No matter how we assign the center of a circle, in the dialog box or by clicking the assigned center in the page, the radius of the circle is the linear distance from the assigned center to the left frame center of the selected object. The so-called **Array around Circle** is to array along this circle, so we need to pay attention when click using the mouse.*

8.3.3 Array around Ellipse

Array around Ellipse is to make the selected object array long an ellipse. It is one kind of copy. **Array around Ellipse** creates the pattern shown in the graphic.

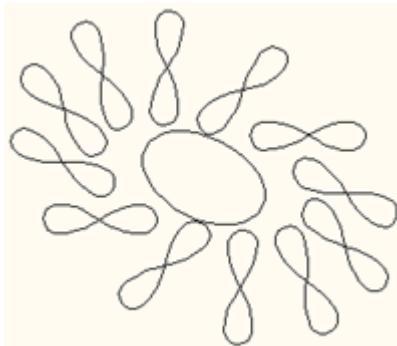


Figure 8-38

The procedure for **Array around Ellipse** is as follows.

- 1) Select the object to be copied (one or more).
- 2) Click the **Array around Ellipse** tool  in the **Graph** toolbar to open the **Array around Ellipse** dialog box.

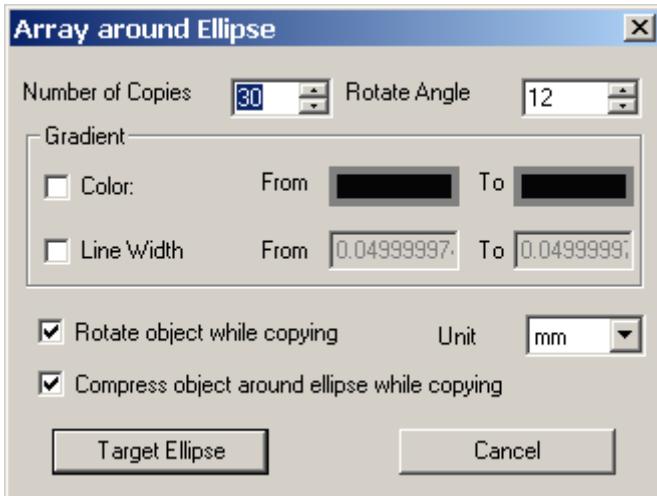


Figure 8-39

- 3) Set copy options in the dialog box.

- **Number of Copies:** It refers how many copies for the selected object or group object.
- **Rotate Angle:** When the **Rotate object while copying** option is selected, it is the relative rotate angle between the assigned two adjacent objects. It can be positive or negative. If it is positive, it rotates counterclockwise. If it is negative, it rotates clockwise.
- **Gradient:** It refers to the change of the outline color and line width of the copied object. Check the **Color** option and the outline color of the copied object may change. Click the **From** and **To** buttons respectively. The **Color** dialog box pops up. Select the outline color of the first and the last copied object. The outline colors of all other objects are the

uniform change between these two colors. Select the **Line Width** check box and the outline width of the checked box may change. Input the outline width of the first and last copied object in the **From** and **To** value boxes respectively. The outline width of the all other objects is the uniform change between these two widths.

- **Rotate object while copying:** When this option is checked, the object rotates while it is copied.
- **Compress object around ellipse while copying:** When this option is checked, the object is compressed while it is arrayed along the ellipse.

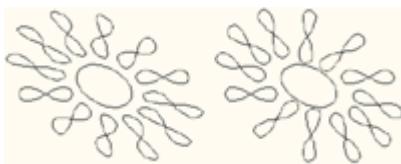


Figure 8-40

4) Click **Target Ellipse**, and the cursor turns to a big black arrow ➡. Click the ellipse object in page, and the selected arrays along this ellipse.

Notes:

- ① *When the object arrays along the ellipse, it does not array on the assigned ellipse directly but it arrays on another virtual ellipse. This ellipse keeps the center, long and short axis, direction and proportion of the assigned ellipse and guarantees that the selected object is at the side of the ellipse. This means the array effect is not only related to the assigned ellipse but also the relative position between the selected object and assigned ellipse.*
- ② *The **Target Ellipse** must be an ellipse object. If none of ellipse is selected, a dialog box pops up to ask the user to select **Retry** or **Cancel**.*

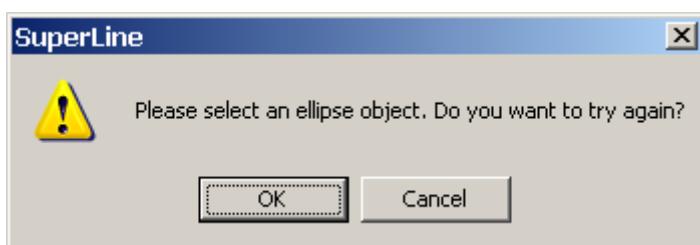


Figure 8-41

8.3.4 Array in Matrix

Array in Matrix is to make multiple copies for the selected objects, and array as a matrix along the horizontal and vertical directions respectively. It is the most commonly used method for designing the texture. The pattern created by **Array in Matrix** is shown in the graphic. We can see it is a typical texture.

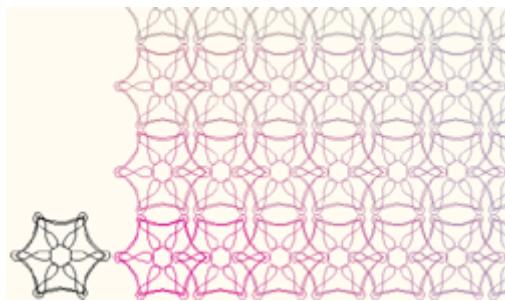


Figure 8-42

The procedure is shown as follows.

- 1) Select the object to be copied (one or more).
- 2) Click the **Array in Matrix** tool  in the **Graph** toolbar to open the **Array in Matrix** dialog box.

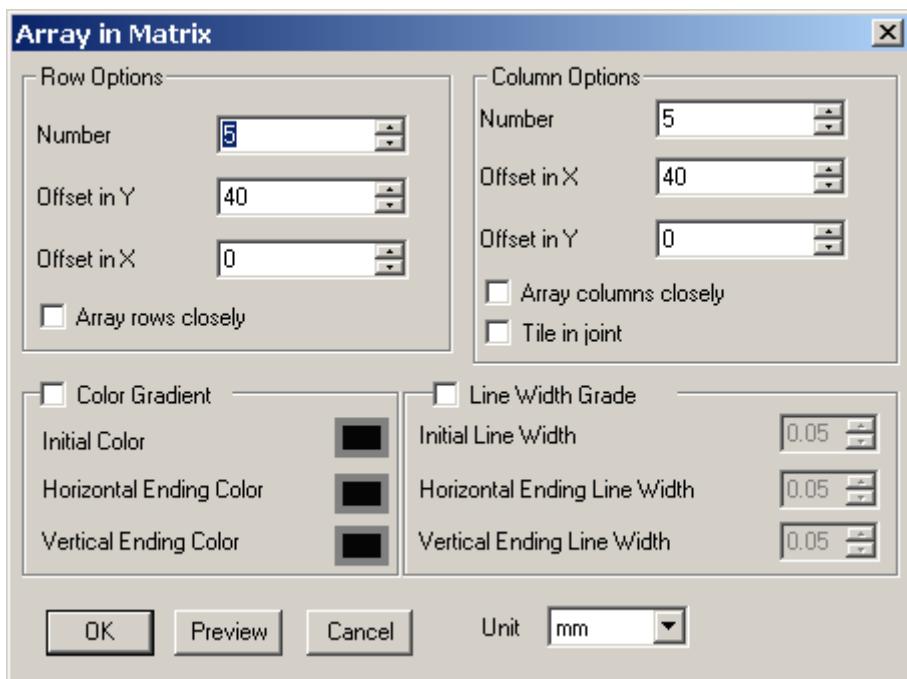


Figure 8-43

- 3) Set the copy options in the dialog box.

Set horizontal array options in **Row Options** area:

- **Number:** how many rows to copy.
- **Offset in Y:** the difference of horizontal coordinates between two adjacent rows. If it is 0, all rows align to the left together. If it is positive, all rows align to the right gradually.
- **Offset in X:** the difference of vertical coordinates between two adjacent rows. If it is positive, all lines are up. If both the **Offset in Y** and the **Offset in X** are 0, the copied rows are overlapped.
- **Array rows closely:** When this option is selected, **Offset in Y** value

box is grayed out. The distance between the two adjacent lines is 0, which means that the **Offset in Y** equals to the line height.

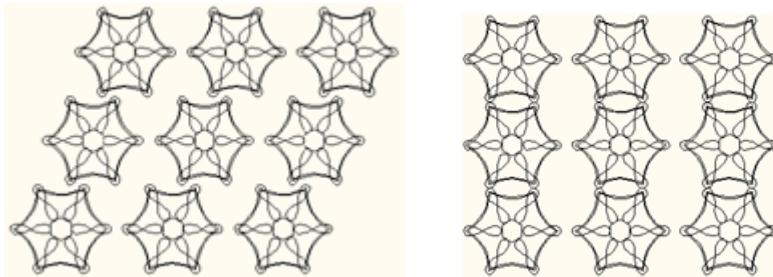


Figure 8-44

Set vertical array options in **Column Options** area:

- **Number:** how many columns to copy.
- **Offset in Y:** the difference of horizontal coordinates between two adjacent rows. If it is 0, all rows align to the left together. If it is positive, all rows align to the right gradually.
- **Offset in X:** the difference of vertical coordinates between two adjacent rows. If it is positive, all lines are up. If both the **Offset in Y** and the **Offset in X** are 0, the copied rows are overlapped.
- **Array columns closely:** When this option is selected, **Offset in Y** value box is grayed out. The distance between the two adjacent lines is 0, which means that the **Offset in Y** equals to the line height.

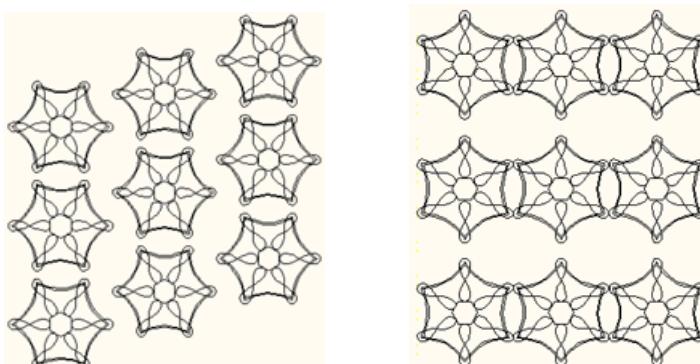


Figure 8-45

- **Tile in joint:** When this option and the **Array columns closely** option are checked, **Offset in X** check box and **Offset in Y** check box are all grayed out. This means all copied rows are connected to a continuous curve.

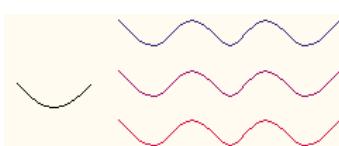


Figure 8-46

Tile in joint is to tile a section of curve continuously. At this time, the **Number** in the **Column Options** area refers to how many objects needs to be copied for each row during the process of **Tile in joint**. **Tile in joint** only fits unclosed graphic objects, but is invalid to closed graphics. It is also useless for the curve with multiple sub paths.

- **Color Gradient:** This option allows you to select the outline color change of the copied graphic object. When this option is selected, the outline color of the copied graphic object may change. Click the **Initial Color**, **Horizontal Ending Color** and **Vertical Ending Color** buttons respectively, the **Color** dialog box will pop up for you to define each color. **Initial Color** refers to the outline color of the first copied graphic object. **Horizontal Ending Color** refers to the outline color of the last copied graphic object in the first row. **Vertical Ending Color** refers to the outline color of the first copied graphic object in the last row. The outline colors of all other copied objects are the uniform changes between these colors (other rows change according to the rule of the first row).
- **Line Width Grade:** When this option is checked, the outline width of the copied graphic object may change. Input width values in the **Initial Line Width**, **Horizontal Ending Line Width** and **Vertical Ending Line Width** boxes respectively. **Initial Line Width** refers to the line width of the first copied graphic object. **Horizontal Ending Line Width** refers to the line width of the last copied graphic object in the first row. **Vertical Ending Line Width** refers to the line width of the first copied graphic object in the last row. The line widths of all other copied objects are the uniform changes between these line widths (other rows change according to the rule of the first row).

4) When you complete the setting, click **OK** button. The selected object is copied.

Note: The **Color Gradient** and **Line Width Grade** options in the dialog box have no effect on the non-graphic objects and non-clip-mask objects.

8.3.5 Array along Curve

Array along Curve is to make the selected objects copy and array along a curve. During the array, the objects can be zoomed in and zoomed out to design patterns like microtext. The effect of **Array along Curve** is shown in the graphic below.



Figure 8-47

The procedure of **Array along Curve** is shown as follows.

- 1) Select the object to be copied (one or more).
- 2) If **Array along Curve** dialog box is not opened, select **Effect > Array along Curve** in the menu. The **Array along Curve** dialog box pops up.

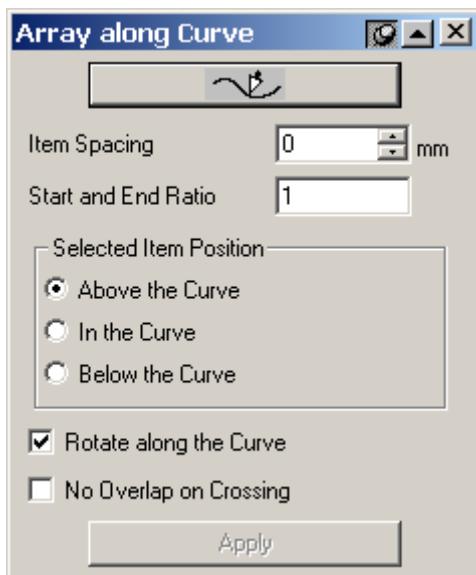


Figure 8-48

- 3) Set the copy options in the dialog box.

- Select a graphic object as the array path: Click the **Path** button  in the dialog box and the cursor turns to a curved arrow . Move the cursor to the page. Click the graphic object as the array path (If there is no valid path at the clicked area, a message box pops up. Click **OK** in the box. The cursor is still a curved arrow, and we can click the path again. If clicking **Cancel** in the box, the cursor turns to its normal state, which means it cannot be selected.). Select it as the array path and the **Path** button graphic in the dialog box turns to full black.
- **Item Spacing**: Determines the space between the two adjacent graphic units for Array along Curve.
- **Start and End Ratio**: It refers to the size ratio between the first copied object and the last object. Assume it is set to s , and the first copied object is the original size and the last object is the s times of the original

size. The size of other objects in between changes uniformly. If the **Start and End Ratio** is bigger than 1, the objects get larger gradually. If it equals to 1, the object keeps its own size. If it is less than 1, the objects get smaller gradually.

- **Selected Item Position:** Options in the **Selected Item Position** area determine the relative positions of the graphic units against the curve during the process of Array along Curve. There are three options.

Above the Curve: The graphic unit is on the top of the curve (when the curve is closed, it is outside of the curve).

In the Curve: The graphic unit is in the middle of the curve.

Below the Curve: The graphic unit is at the bottom of the curve (when the curve is closed, it is inside of the curve).

- **Rotate along the Curve:** When this option is checked, the graphic unit rotates along the direction of the array path when the graphic unit arrays along the curve.
- **No Overlap on Crossing:** when this option is selected, only one graphic object is arrayed at the place where curves cross.

4) After the options are set, click **Apply** button. The selected object arrays long the path.

Notes:

- ① *The following objects can be graphic units for **Array along Curve**, such as graphic, text, image, group object, clip-mask object or multiple objects.*
- ② *The following objects can be paths for **Array along Curve**, such as graphic, text, and group object. If it is text object, it is equivalent to converting it to a curve and then used as an array path. If it is a group object, only the graphic and text in the group can be the array path.*
- ③ *When the Item Spacing is set to a negative value, you may obtain compelling effect unexpectedly.*

8.3.6 Array Text along Curve

For text object, SuperLine provides a more convenient and efficient method for Array along Curve, i.e. **Array Text Along Curve**. The effect of Array Text along Curve is shown in the graphic below.

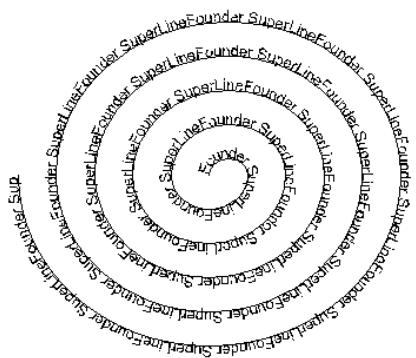


Figure 8-49

The procedure for **Array Text along Curve** is as follows.

- 1) Select the object for array path.
- 2) Select **Effect > Array Text along Curve** to open the **Array Text along Curve** dialog box.

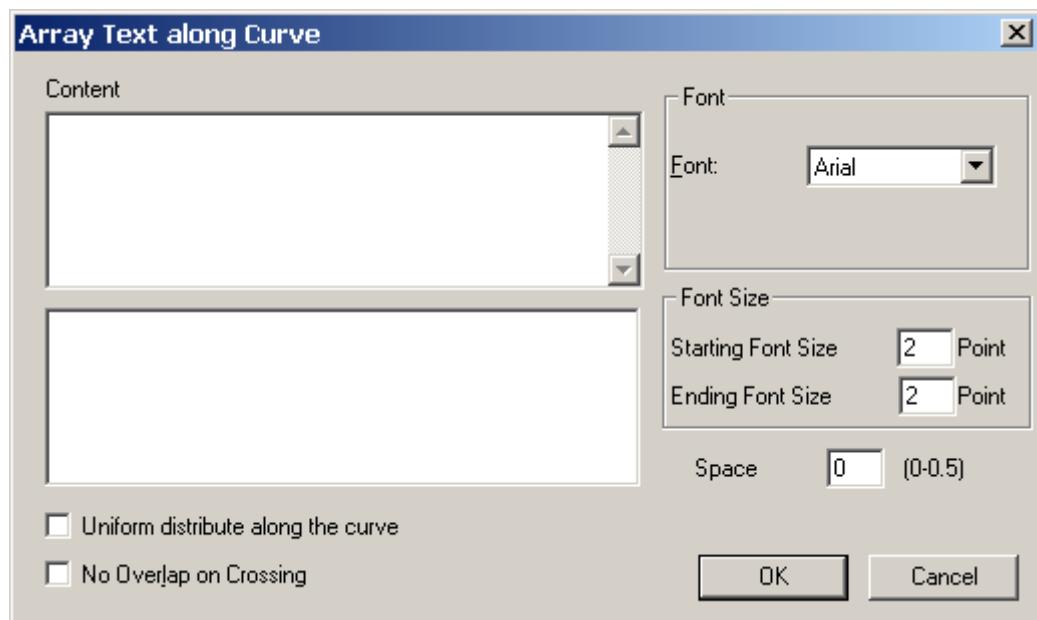


Figure 8-50

3) Set each option in the dialog box, and click **OK**.

- **Content**: You can input text from the keyboard in the **Content** area as the text unit for **Array along Curve**.
- **Font**: Your selected option in the **Font** dropdown list determines the font of the content you input.
- **Starting Front Size** and **Ending Front Size**: Determine the start and end font size of the text. If the two values are set differently, we can get the gradient effect of the **Array Text along Curve**.
- **Space**: Determines the space between the characters in the text.
- **Uniform distribute along the curve**: Distributes the inputted words

uniformly along the curve. When this option is selected, **Ending Front Size** and **Space** turn grayed out, and the **Starting Front Size** determines the size of the text.

- **No Overlap on Crossing:** when this option is selected, only one text object is arrayed at the place where curves cross.

4) When you complete the setting, click **OK**.

8.4 Auto Lace

Lace is to continuously copy one or more elements and create a frame. It has many different formats. Lace is the framework of the texture, which provides clear skeleton for the whole texture and makes the whole texture a clean-cut. It is also an important decoration in the anti-counterfeit design.

SuperLine provides **Auto Lace** function, to ensure that the connections at the corner of the lace look natural. Compared to other texture design software by manually doing this, it is more convenient and professional. The effect of **Auto Lace** (closed join) is shown in the graphic.

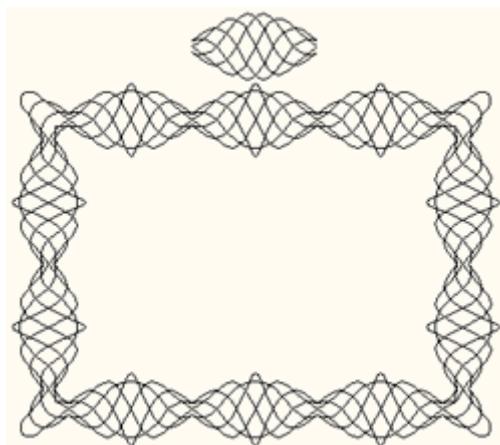


Figure 8-51

The procedure of the **Auto Lace** is as follows.

- 1) Select the object as lace unit (see Notes).
- 2) Select **Effect > Auto Lace** to open the **Auto Lace** dialog box.



Figure 8-52

3) Set lace options in the dialog box.

- **Type:** Options include **Simple joint** and **Closed joint**. **Closed joint** is to join the copied lace units as one and create the symmetric ungrouped lace. **Simple joint** is to simply join the copied lace units to a lace. The created lace is not symmetric and can be ungrouped to lace units. Moreover, Simple Join can keep the filling properties of the lace unit, and **Closed joint** ignores the filling properties of the units.

The different effects of **Simple joint** and **Closed joint** are shown in the graphic.

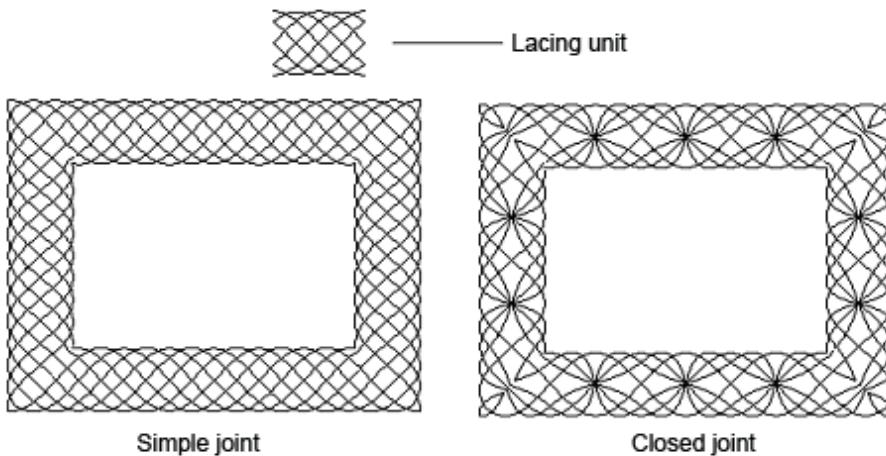


Figure 8-53

- **Width:** It means the width of the created lace object.
- **Height:** It means the height of the created lace object.
- **Unit:** Determines the unit for the Width and Height values.

4) Click **OK** and the lace is created. At the corner of the lace, SuperLine will treat it specially to make the joint between the lace units natural and smooth.

Notes:

- ① The lace unit of **Simple joint** can be any graphic objects and text objects.

② The lace unit of **Closed joint** can be single graphic object, multiple objects, and group objects. If multiple objects are selected, there must be a graphic object with open sub path and the text objects and clip-mask objects are all used for creating lace (Text must be converted to curve first and only mask in clip-mask objects are used.). If a group object is selected, there must be graphic objects with open sub path in the group and the text and clip-mask objects are all used for creating lace.

8.5 Fill Lines

Fill Lines is to fill in a graphic with lines based on certain rules to create wonderful effect. Founder SuperLine provides two Fill Lines modes, **Fill Line** and **Fill Interlaced Line**.

8.5.1 Fill Line

Fill Line refers to fill in straight lines. This function is quite simple, which is to use a series of parallel lines to fill in the inner area of the graphic. The density and the direction of the straight lines can be changed. The effect of Fill Line is shown in the graphic.



Figure 8-54

The procedure of **Fill Line** is as follows.

- 1) Select the objects to be filled in (one or more).
- 2) Select **Effect > Fill Line** to open the **Fill Line** dialog box.

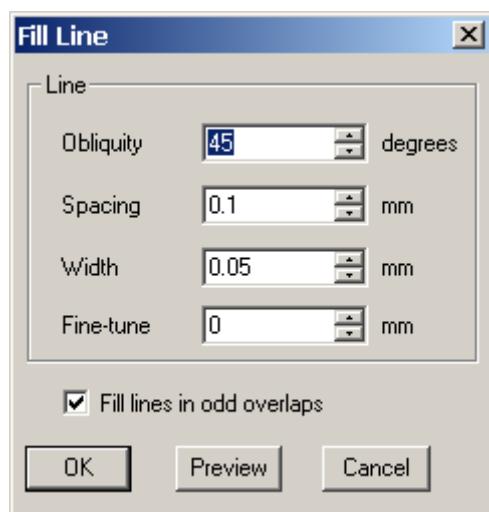


Figure 8-55

3) Set the options in the dialog box.

- **Obliquity:** It refers to the obliquity degree of the filled parallel lines, which determines the direction of the line.
- **Spacing:** It is the distance between the filled parallel lines. The bigger it is, the lines are sparser.
- **Width:** It is the width of the parallel lines.
- **Fine-tune:** It has small effect on the filling effect but determines the effect of the margin of the object. Its minimum value is 0 and maximum value is less than the sum of the line width and the spacing (It is insignificant to have a big value).
- **Fill lines in odd overlaps:** It means to fill in the paths with odd directions in the selected paths.



Figure 8-56

The **Fill lines in odd overlaps** check box is useful for objects with multiple crossed paths. For a single path object, we must select this check box. The function of this option is shown in the graphic. The upper two graphics are the same original object, a group object. The lower-left graphic is the effect when this option is selected, while the lower-right one is the effect when it is NOT selected.

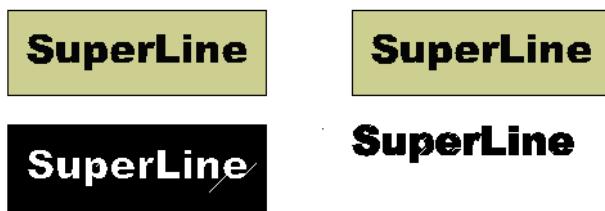


Figure 8-57

With the properties of the **Fill lines in odd overlaps**, by selecting the text and the graphic overlapped with it to do **Fill Line**, we can design the effect of characters cut in intaglio and characters cut in relief, as shown in the below graphic. According to this, we also can overlap the characters cut in intaglio and characters cut in relief filled in lines with different degrees, and create latent effect.

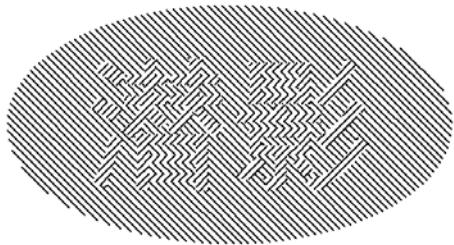


Figure 8-58

- 4) Click **OK** and the selected object is filled.

Note: We can select the following objects as Fill Line, such as a graphic object, image, text, group object, clip-mask object, or multiple objects. If the graphic has multiple sub paths, each sub-path will be filled. If an image is selected, the image will disappear and there is no other effect. If text is selected, it is equivalent to convert the text to graphic first and then do Fill Line. If a clip-mask object is selected, fill in the mask object and other objects in the mask disappear. If a group object is selected, fill in the graphic object, text and clip-mask object in the group. Selecting multiple objects is just like selecting a group object.

8.5.2 Fill Interlaced Line

Fill Interlaced Line is more complicated but its effect is more attractive. Fill Interlaced Line is to fill in lines with different directions (horizontal or vertical) and colors respectively according to the folding states of the graphics. We often use Fill Interlaced Line to design latent effect, as shown in the graphic.

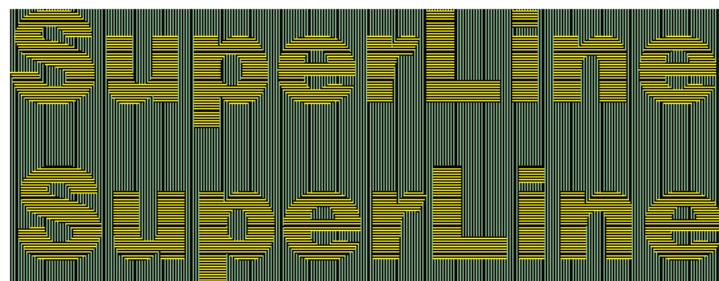


Figure 8-59

The procedure of **Fill Interlaced Line** is as follows.

- 1) Select the objects to be filled in (two or more).
- 2) Select **Effect > Fill Interlaced Line** to open the **Fill Interlaced Line** dialog box.

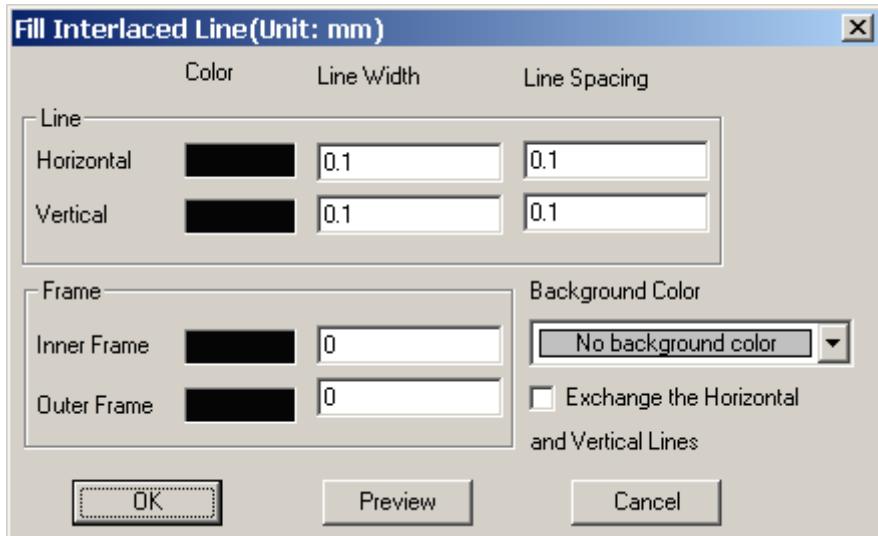


Figure 8-60

3) Set the options for **Fill Interlaced Line** in the dialog box.

- **Line:** It defines the properties (color, line width and terminal point) of the horizontal and vertical lines filled in the object. Click **Horizontal** or **Vertical**, the **Color** dialog box pops up. You can set the colors of horizontal and vertical lines respectively. And the line width can be specified in the **Line Width** edit boxes.
- **Line Spacing:** It defines the line spacing between the adjacent horizontal and vertical lines filled in the object. The bigger the line spacing, the filled lines are sparser. Input values in **Line Spacing** edit boxes directly.
- **Frame:** It refers to the properties (color, line width and terminal point) of the outer envelope frame around the horizontal and vertical lines. Click **Inner Frame** or **Outer Frame**, the **Color** dialog box pops up. You can set the colors of frame lines. And the corresponding **Line Width** edit boxes control line width of the frame.
- **Background Color:** It refers to the filling color under the crossed lines, which are listed in the list box. There are three options in the list box. If **No background color** is selected, don't fill in any color under the crossed lines. If **Last color used** is selected, fill in the previously selected color under the crossed lines. If **New color** is selected, the **Color** dialog box pops up and allows the user to select the filling color under the crossed lines (This color becomes the **Last color used** for the next filling).
- **Exchange the Horizontal and Vertical Lines.** When this option is selected, the horizontal and vertical lines of the filling object exchange.

4) Click **OK**, and the selected object is filled.

After the execution of **Fill Interlaced Line**, a new group object is created and

the original selected object does not change.

During the application of **Fill Interlaced Line**, which part of the object fill in horizontal lines and which fill in vertical lines are determined by the paths of the object.

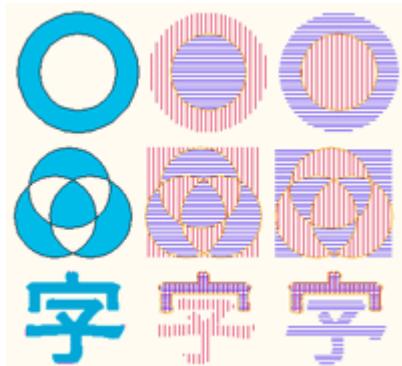


Figure 8-61

For a cirque as shown in the figure above, the part of the cirque can fill in color. If do **Fill Interlaced Line** for this cirque, the part of the cirque fills in vertical lines and the inner part fills in horizontal lines. If the **Exchange the Horizontal and Vertical Lines** check box is checked, it is reverse.

For a graphic with multiple sub paths crossed partly as shown in the figure above, the part that the sub paths do not cross fills in horizontal lines and the crossed part and the whole frame fill in vertical lines. If the **Exchange the Horizontal and Vertical Lines** check box is checked, it is reverse.

For a text as shown in the above figure, the text part fills in horizontal lines and the text frame fills in vertical lines. If the **Exchange the Horizontal and Vertical Lines** check box is checked, it is reverse.

Note: We can select the following objects for Fill Interlaced Line, such as a graphic object (with multiple sub path inside), text, group object, or multiple objects. If group object is selected, the graphic objects and text take effect. Selecting multiple objects is just like selecting a group object.

8.6 Relief on Graphic

The relief effect in SuperLine is to simulate the relief effect in real world. Consolidate the margin of the pattern to make it have solidification feeling of the relief. In SuperLine, it can design relief effect for both graphics and images. Here we only talk about Relief on Graphic. For details, refer to Section 9.1.

8.6.1 Relief on Straight Lines

The effect of **Relief on Straight Lines** is to use straight lines as the basic lines

for filling the graphic, and design relief effect on lines at the rim of the graphic. The characteristics of **Relief on Straight Lines** are concise and standing-out at the rim. The effect of **Relief on Straight Lines** is shown in the graphic.



Figure 8-62

The method of designing **Relief on Straight Lines** is as follows.

- 1) Select the object for making relief (one or more objects).
- 2) Select **Effect > Relief on Line** to open the **Relief on Line** dialog box.

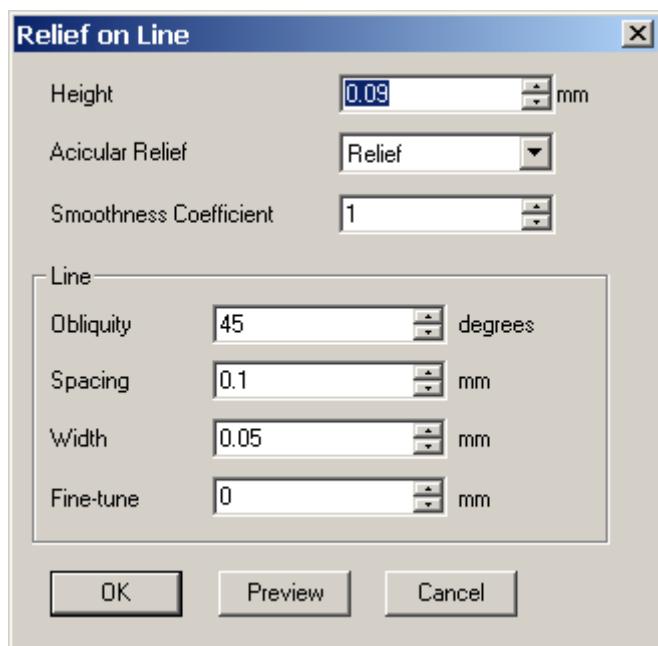


Figure 8-63

- 3) Set relief effect options in the dialog box.

- **Height:** It is the height of the relief. The bigger it is, the relief effect is more apparent. If this value is bigger than the line spacing, the lines may get crossed.



Figure 8-64

- **Acicular Relief:** It refers to make which kind of relief. There are two options in the list box, Relief and Raster. Select **Relief** to create

traditional relief effect. Select **Rasterize** to create the effect of viewing objects through the raster. The latter effect is not very obvious, which makes it hard to be counterfeited.



Figure 8-65

- **Smoothness Coefficient:** It refers to the smooth degree of the rim of the relief. The value ranges from 0.001 to 0.1 mm. The bigger the coefficient, the rim of the relief is more precipitous. The smaller the coefficient, the rim of the relief is smoother.



Figure 8-66

- **Line:** The options in the **Line** area determine the line characteristics for creating the relief. They are similar to the options set in the **Fill Line** dialog box.

Obliquity: It refers to the direction of the line for making relief.

Spacing: It is the distance between the lines. The smaller the spacing and the denser of the lines, the relief effect is finer. Inputting values in the box can do this.

Width: It is the width of the lines.

Fine-tune: It refers to the inner method for creating relief. It has small effect on the relief effect. Please refer to the explanation in Fill Line dialog box.

4) Click **OK**. The relief effect is generated for the selected object.

Notes:

- ① *Because the relief effect is created according to the folding of the border of the graphic, if there is only one sub path in the selected object, the create effect will not be satisfied. There must be many sub paths in the selected object when creating relief effect. For example, if we want to create the relief effect shown in the figure, we can select the ellipse and the rectangle (which is bigger than the ellipse and overlapped with the ellipse) at the same time, or select the group object after grouping the ellipse and the rectangle, or combine the ellipse and the rectangle to a graphic with multiple sub paths, and then select this graphic.*

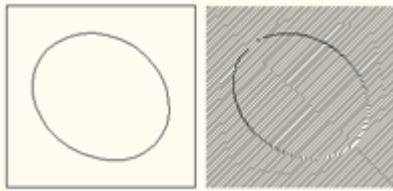


Figure 8-67

② When design the relief effect, we can select the following objects, such as a graphic, text, group object, or multiple objects. If text is selected, convert the text to curves first and then make relief effect. If group object is selected, the graphic object and text in the group take effect. If multiple objects are selected, it is the same as selecting a group object.

8.6.2 Relief on Curve

Corresponding to Relief On Straight Lines, Relief On Curves is to assign a group of curves as the basic lines filled in the graphic, and design relief effect at the rim of the graphic. The characteristics of Relief On Curves are flexible and much more favored to create patterns even hard to be counterfeited. The effect of Relief On Curves is shown in the graphic.

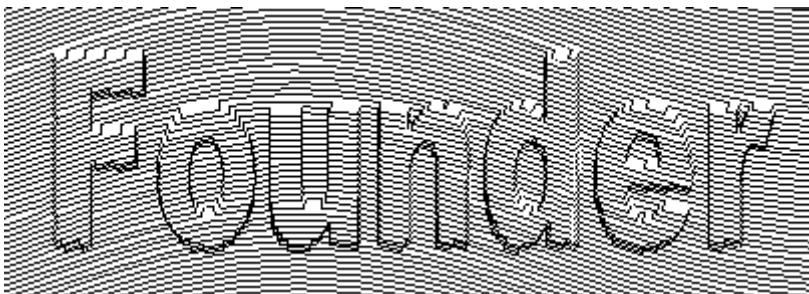


Figure 8-68

The procedure of designing **Relief on Curve** is as follows.

- 1) Select the object for making relief (one or more objects).
- 2) Select **Effect > Relief on Curve** to open the **Relief on Curve** dialog box.

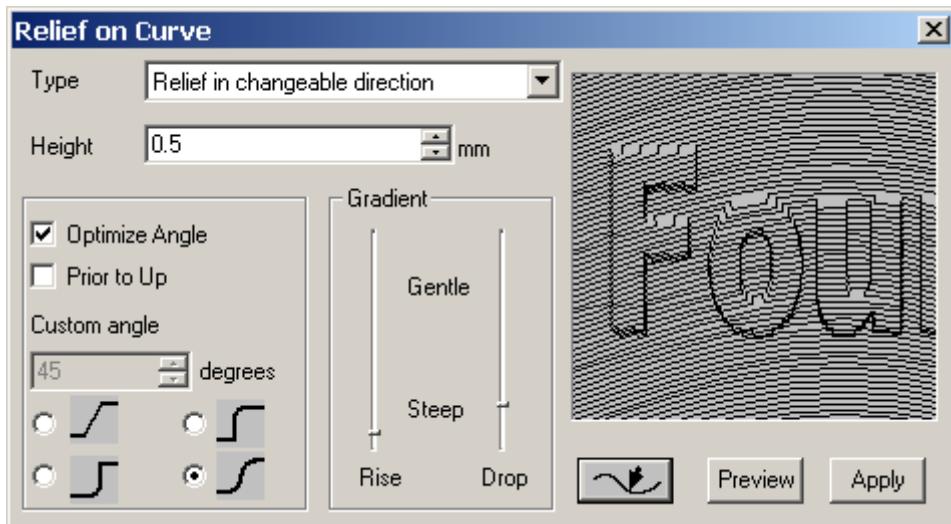


Figure 8-69

3) Set relief effect options in the dialog box.

- **Assign Basic Curve for Relief:** Basic Curve for Relief is the curve for making Relief on Curves, which is the curve to fill in the relief and determine the effect of the relief. In the dialog box, click **Path** button  and the cursor turns to a big black arrow . Move the cursor to the page, and click the graphic object as the Basic Curve for Relief. The selected object should be a group of relatively denser curves. The denser the curves, the relief effect is more beautiful.
- **Preview:** Click Preview in the dialog box to preview the current relief effect on the dialog box.
- **Type:** It refers to the format of the relief, including the relief of convertible direction and relief of fixed direction.
- **Height:** It is the height of the relief. The bigger it is, the relief effect is more apparent. If this value is bigger than the line spacing, the lines may get crossed.
- **Gradient:** It is the smooth degree at the rim of the relief, which can be adjusted by two scroll bars.

The left scroll bar is used for adjusting the gradient of the beginning rim of the relief. Drag the scroll bar up, and the rim turns smooth. Drag it down, and the rim turns precipitous.

The right scroll bar is used for adjusting the gradient of the end rim of the relief. Drag the scroll bar up, and the rim turns smooth. Drag it down, and the rim turns precipitous.

The beginning rim and the end rim of are related to the direction of the curve, but not simply the right and the left.

- **Optimize Angle:** Select this check box. Both the relief object and the

basic lines determine the curve direction of the beginning and end rim of created relief. Otherwise, the curve direction is only determined by the basic lines, but has no relationship with the relief object.

- **Prior to Up:** Select **Prior to Up**, and the starting and end curve of the relief are convex. Otherwise, the curves are concave. This check box is only valid to relief of convertible direction.
- **Custom angle:** This can be used to set the relief degree, which is the curve direction at the starting and end rim. This check box is only valid to relief of fixed direction.
- **Relief style:** There are four buttons in the group box to control the relief styles. About these four different styles, refer to Section 9.1.

4) If we are satisfied with the parameters, click **Apply** in the rotate window to create the relief effect.

Note: *We can select the following objects for designing relief effects, such as a graphic object, text, group object, or multiple objects. If text is selected, convert it to curve first then make relief. If group object is selected, only the graphic objects and text in the group take effect. If multiple objects are selected, it is similar to selecting a group object.*

8.7 Graphic Filtering

We are more familiar with the image filtering, which is to give some changes on the image to create interesting effect, such as the effect of blowing the wind and the effect of vortices. The graphic filtering is similar to this. It also gives some changes on the graphic and creates the satisfied originality effect.

SuperLine can do filtering for the graphic, for example, to create fisheye effect, to change the density distribution of the graphic, or to change the whole shape of the graphic.

8.7.1 Fish Eye

The **Fish Eye** effect is to create concave-convex effect of the graphic. The **Fish Eye** effect created by SuperLine is shown in the figure.

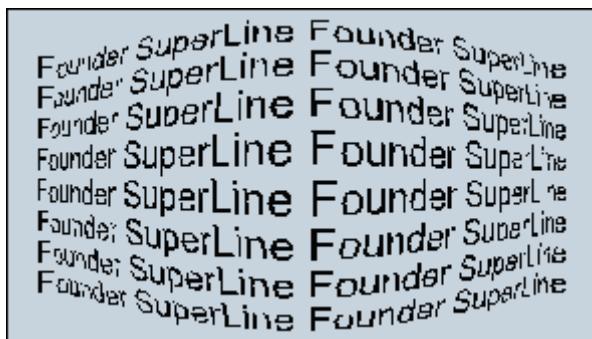


Figure 8-70

The procedure of creating **Fish Eye** effect is as follows.

- 1) Select the object for making fisheye.
- 2) If the **Fish Eye** dialog box is not opened, open it by clicking **Effect > Fish Eye**.

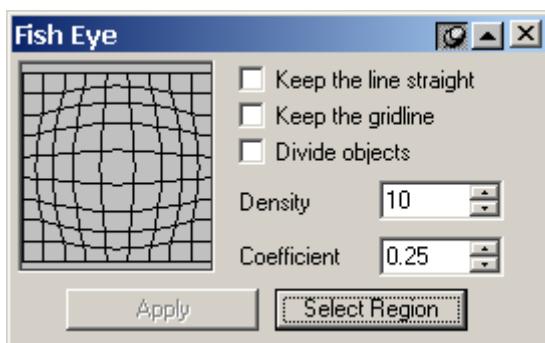


Figure 8-71

- 3) Set up options in the rotate window.

The grid sketch map for guiding filtering is at the left side of the dialog box. The distribution of grid determines the effect of filtering.

- **Keep the line straight:** If this check box is selected, the straight line keeps straight line during the process of graphic change.
- **Keep the gridline:** If this check box is selected, the grid lines for guiding the filtering also keep as a part of filtering effect after the graphic change is done.

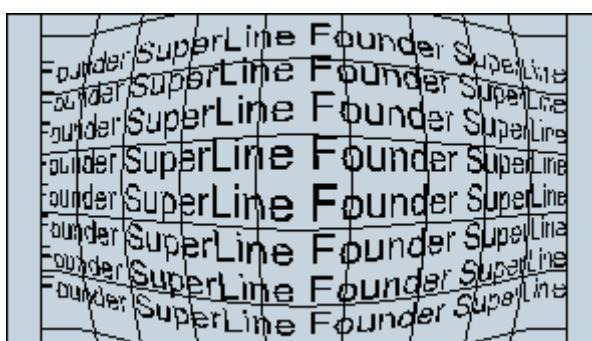


Figure 8-72

- **Divide objects:** Select this check box. Add nodes on the graphic as necessary during the graphic change. This can make the wave filtering change more complete. If this check box is not selected, the graphic change may be limited.

Use the **Node Editor** tool  in the **Graph** toolbar to select the changed graphic (if it is the group object, **Ungroup** first.), and view the added nodes.

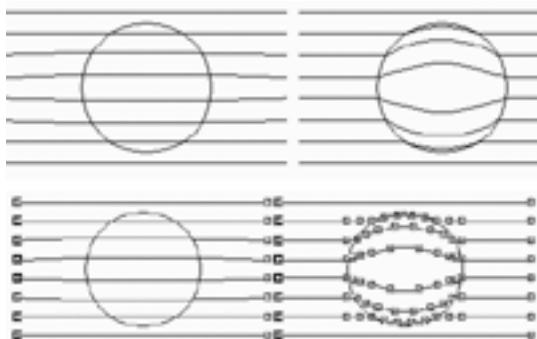


Figure 8-73

- **Density:** It is the density of the grid lines. The bigger the density, the change is finer. It ranges from 2 to 20.
- **Coefficient:** It is the degree of the wave filtering effect and ranges from -1 to 1. If it is bigger than 1, the wave filtering effect is convex. If it is less than 0, the effect is concave.

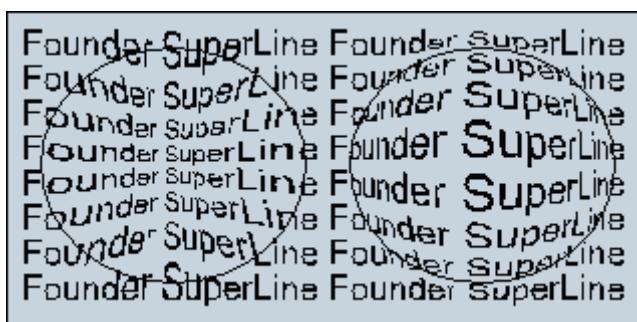


Figure 8-74

- **Select Region:** The user can decide which part to change area during making fisheye effect. It is equivalent to assign the wave filtering, which is the mask (or selected area) in the wave filtering of image. Click the **Select Region** button, the cursor turns to an arrow  pointing to right. Use the mouse to click the graphic object used as the wave filtering area. The part of the object in the area is filtered, and the rest keeps unchanged. If no Select Area is selected, the whole part of the selected object is filtered.

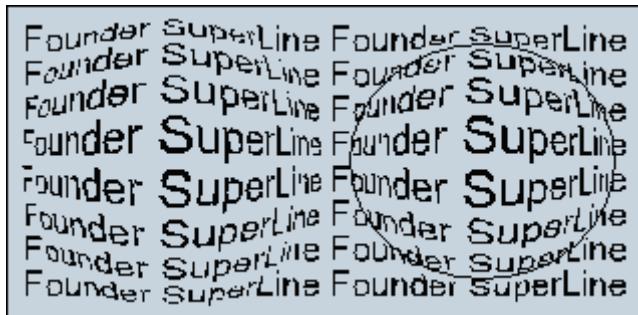


Figure 8-75

4) After assigning all parameters, click **Apply** in the dialog box to create fisheye effect.

Notes:

- ① We can select the following objects for creating fisheye effect, such as a graphic object, text, group object, or multiple objects. If text is selected, convert it to curve first then make fisheye effect. If group object is selected, make fisheye effect for the graphic objects and text in the group at the same time. If multiple objects are selected, it is similar to selecting a group object.
- ② We can select the following objects as the filtering area such as a graphic object, text (need to convert to curves first), and group object.

8.7.2 Graph Filter

Graphic Filter is to change the shape of the object to cause the pattern of the object to change. The **Graphic Filter** effect created by SuperLine is shown in the following figure.

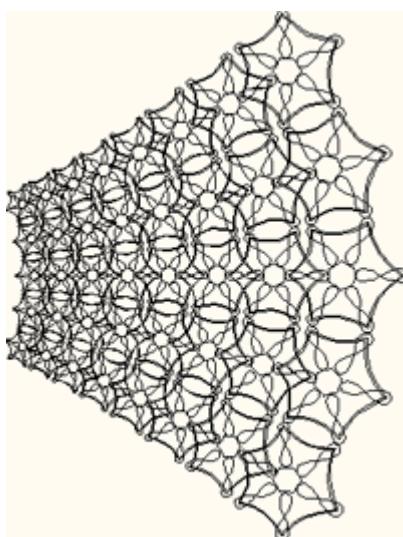


Figure 8-76

The procedure for creating **Graphic Filter** is as follows.

- 1) Select the object for filtering.
- 2) If the **Graph Filter** dialog box is not opened, open it by clicking **Effect > Graph Filter**.

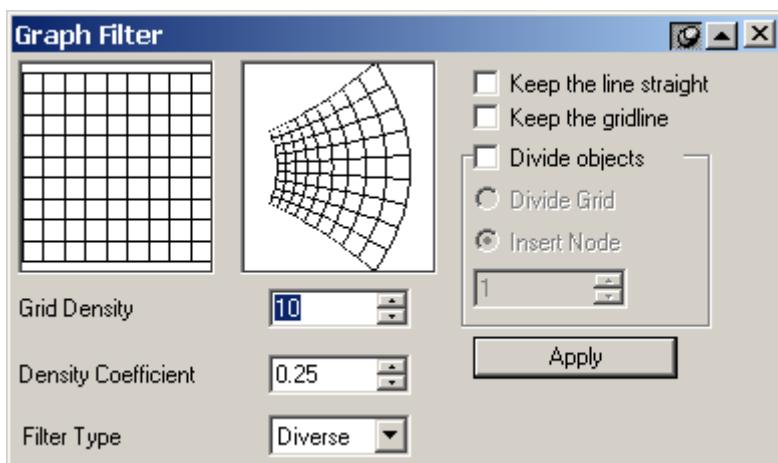


Figure 8-77

- 3) Set the options in the dialog box.

The grid sketch map for guiding wave filtering is at the left side of the dialog box. The effect sketch map for wave filtering is in the middle.

- **Keep the line straight:** If this check box is selected, the line keeps line.
- **Keep the gridline:** If this check box is selected, the grid lines for guiding the wave filtering also keep as a part of wave filtering effect after the graphic change is done.

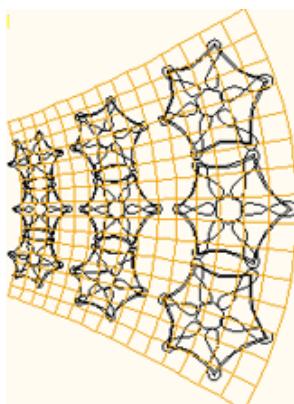


Figure 8-78

- **Divide objects:** This determines how to deal with the nodes in the graphic during wave filtering. If this check box is not selected, no nodes are added and the graphic change may be limited.
- **Divide Grid and Insert Node :** If **Divide objects** is selected, **Divide Grid** and **Insert Node** round buttons are valid. So we can add nodes as necessary. Select the **Divide Grid** round button to add nodes according

to the grid distribution. Select the **Insert Node** round button and input the number of nodes in the following value box to insert the assigned number of nodes on the adjacent grid lines. The more the inserted nodes, the wave filtering is smoother and finer.

Use the **Node Editor** tool  in the **Graph** toolbar to select the changed graphic (if it is the group object, **Ungroup** first.), and view the added nodes.

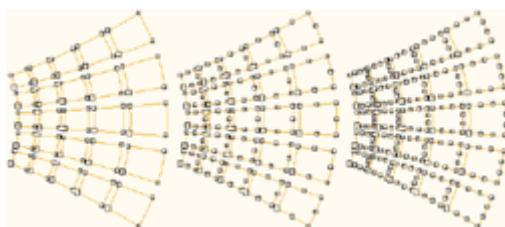


Figure 8-79

- **Filter Type:** This list box defines the styles of the graphic change after wave filtered. There are three options, **Diverse**, **Hyperbola** and **Triangle**. The filtering effect of each option is shown in the following figure.

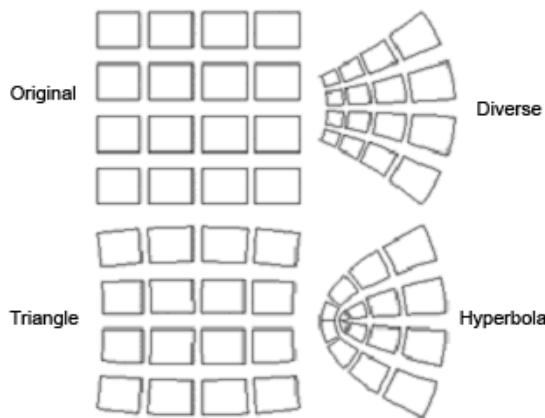


Figure 8-80

- **Grid Density:** It is the density of the grid lines. The bigger the density, the change is finer. It ranges from 2 to 20.
- **Density Coefficient:** It is the degree of the wave filtering effect. When the filtering type is Radiate and Triangle, it is valid and ranges from -1 to 1. The bigger the coefficient, the effect is more obvious.

4) After assigning all parameters, click **Apply** in the dialog box to create **Graphic Filter** effect.

Note: We can select the following objects for creating graphic filter effect, such as a graphic object, text, group object, or multiple objects. If text is selected, convert it to curve first then make graphic filter effect. If group object is selected, only the graphic objects and text in the group participate in Wave Filtering. If

multiple objects are selected, it is similar to selecting a group object.

8.7.3 Density Filter

Density Filter is to change the density distribution of the object to cause the pattern of the object to change. The **Density Filter** effect created by SuperLine is shown in the following figure.

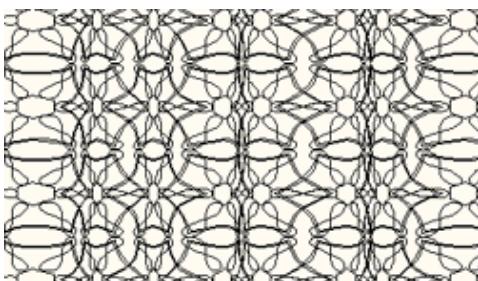


Figure 8-81

The procedure for creating density filter is as follows.

- 1) Select the object for filtering.
- 2) If the **Density Filter** dialog box is not opened, open it by clicking **Effect > Density Filter**.

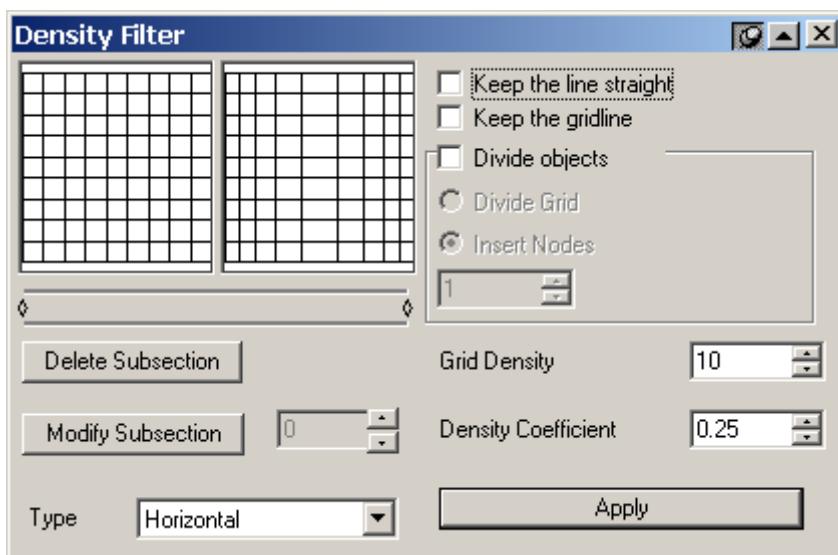


Figure 8-82

- 3) Set the options in the dialog box.

The grid sketch map for guiding wave filtering is at the left side of the dialog box. The effect sketch map for wave filtering is in the middle.

- **Keep the line straight:** Refer to **Graphic Filter**.
- **Keep the gridline:** Refer to **Graphic Filter**.

- **Divide objects:** Refer to **Graphic Filter**.
- **Type:** This list box defines the styles of the graphic change after filtered. There are two options, **Horizontal** and **Vertical**. The filtering effect of each option is shown in the below graphic.

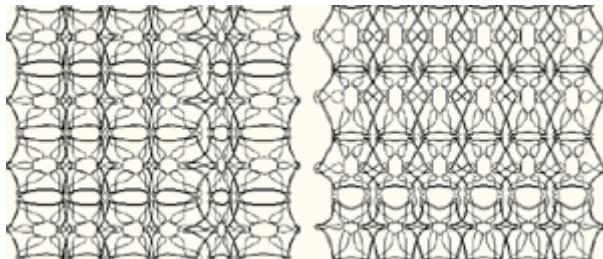


Figure 8-83

- **Grid Density:** It is the density of the grid lines. The bigger the density, the change is finer. It ranges from 3 to 20.
- **Density Coefficient:** It is the degree of the filtering effect and ranges from -1 to 1. If it is bigger than 0, the filtering effect is convex. If it is less than 0, the effect is concave.
- **Density Distribution of the Assigned Filtering:** The user can decide the density distribution of the assigned graphic that means which parts are dense and which parts are sparse.

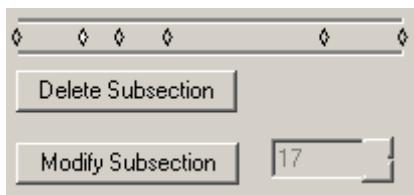


Figure 8-84

There are horizontal lines in the dialog box, which have a lot of scroll bars. These are the tools for adjusting the density distribution. The number and position of the scroll bars determine the density distribution of the wave filtering.

- Click the blank area of the horizontal line to add a scroll bar.
- Click a scroll bar to select it as the current scroll bar. Its position shows in the value box between the **Delete Subsection** and **Modify Subsection** buttons.
- Click **Cancel** to cancel the current scroll bar.
- Drag a scroll bar to set its position.
- Click **Modify Subsection** and set the number of filtering nodes from the popped up dialog box. Press **OK**, the number and position of the scroll bar will change correspondingly.

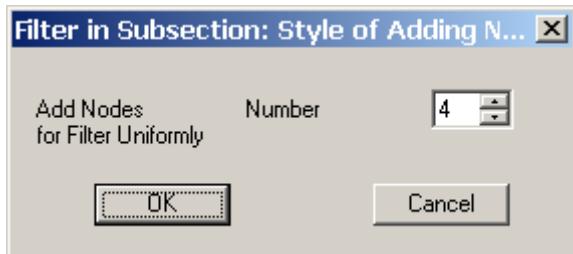


Figure 8-85

After parameters are set, the user can preview the current effect in the dialog box.

4) After assigning all parameters, click **Apply** in the dialog box to create density filter effect.

Note: We can select the following objects for creating Density Filter effect, such as a graphic object, text, group object, or multiple objects. If text is selected, convert it to curve first then make Density Filter effect. If group object is selected, only the graphic objects and text in the group participate in Wave Filtering. If multiple objects are selected, it is similar to selecting a group object.

8.8 Magic Kaleidoscope

Founder SuperLine 4.60 adds the Magic Kaleidoscope guilloche design function. By leveraging principle on using cycloids to realize uniqueness and exclusiveness for your anti-counterfeit work, and combining special algorithm provided in SuperLine anti-counterfeit design system, this function enables you to design a variety of guilloche patterns at your pleasure by only creating a graphic element and define several parameters.

8.8.1 Generate kaleidoscope

To generate kaleidoscope, perform as follows:

(1) Create a graphic element on the page and make it selected. For example:

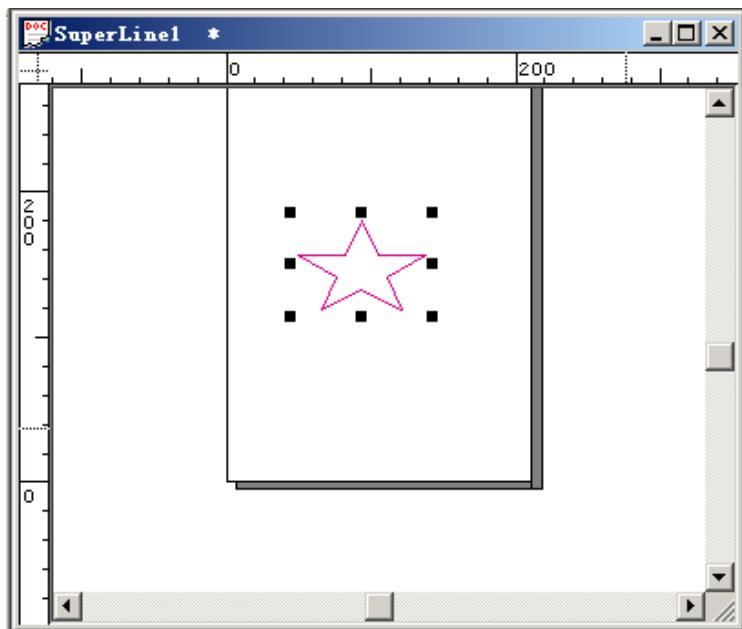


Figure 8-86

(2) Select the **Magic Kaleidoscope** command under the **Effect** menu to open the **Magic Kaleidoscope** dialog box, shown as in the following figure.

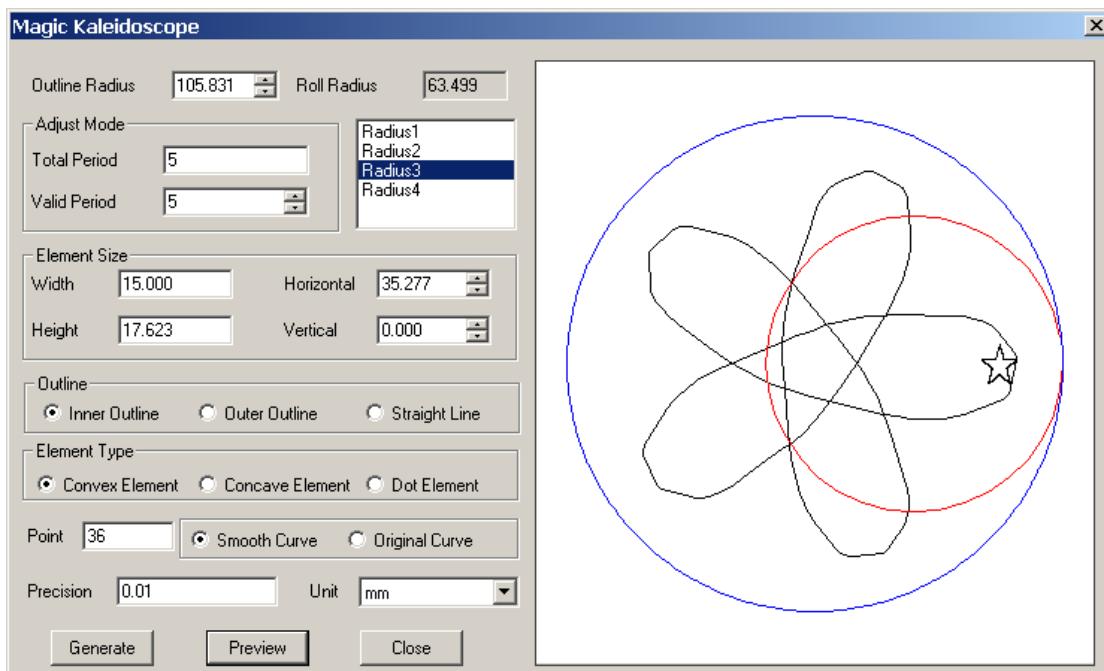


Figure 8-87

(3) In the preview area, as you can see, the graphic object created in procedure (1) (the pentagon) has become a basic unit of the kaleidoscope. Here as an example, we remain all parameters in the **Magic Kaleidoscope** dialog box to their default values, and click **OK**. A kaleidoscope pattern will be generated on the page, as shown in the following figure.

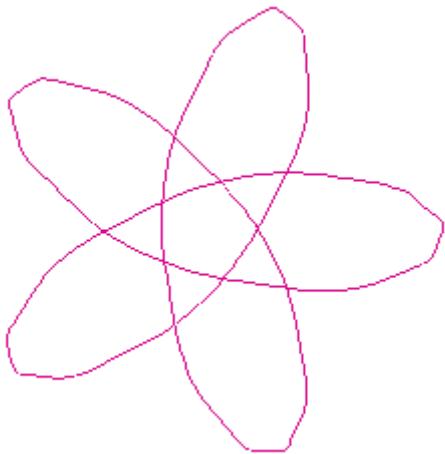


Figure 8-88

8.8.2 Basic Working Principle of Magic Kaleidoscope

We still take the red pentagon in the above figure as an example to discuss how the guilloche pattern is formed.

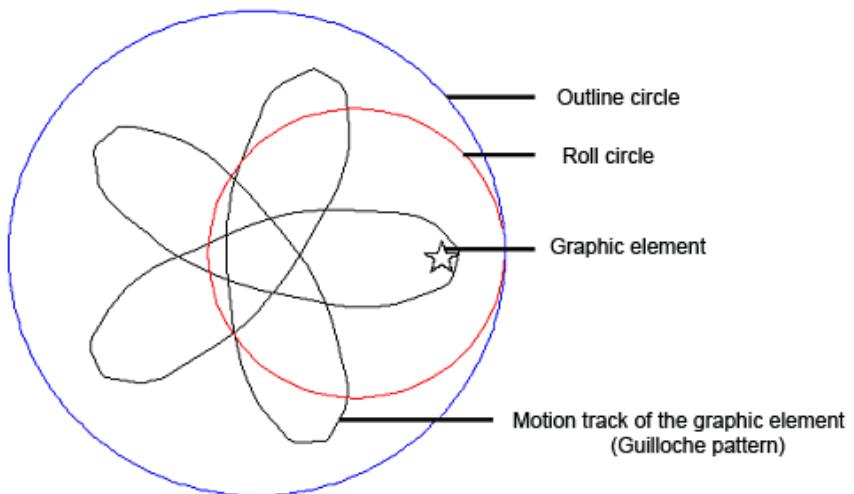


Figure 8-89

Outline Circle: the big, outmost and abstract circle. Its outline stays in an unmoved state, representing the motion track of the small roll circle inside. It determines the range and size of the generated pattern.

Roll Circle: the small rolling circle inside the outline circle. It moves along the outline of the bigger circle.

Graphic element: located randomly inside the roll circle, rotating while rolling along with the roll circle.

Motion track of the graphic element: the finally generated guilloche pattern, describing the motion track of the graphic element as a result of the rotation and

the roll.

8.8.3 Parameter settings

The settings for the big outline circle, the small roll circle and the graphic element are closely affected by each other. Different combination of their settings can produce various kaleidoscope effects.

When you want to view the effect after you have modified one or more of the parameters, you can click the **Preview** button or click anywhere in the preview area to preview. In this way, you don't need to generate it on the page each time.

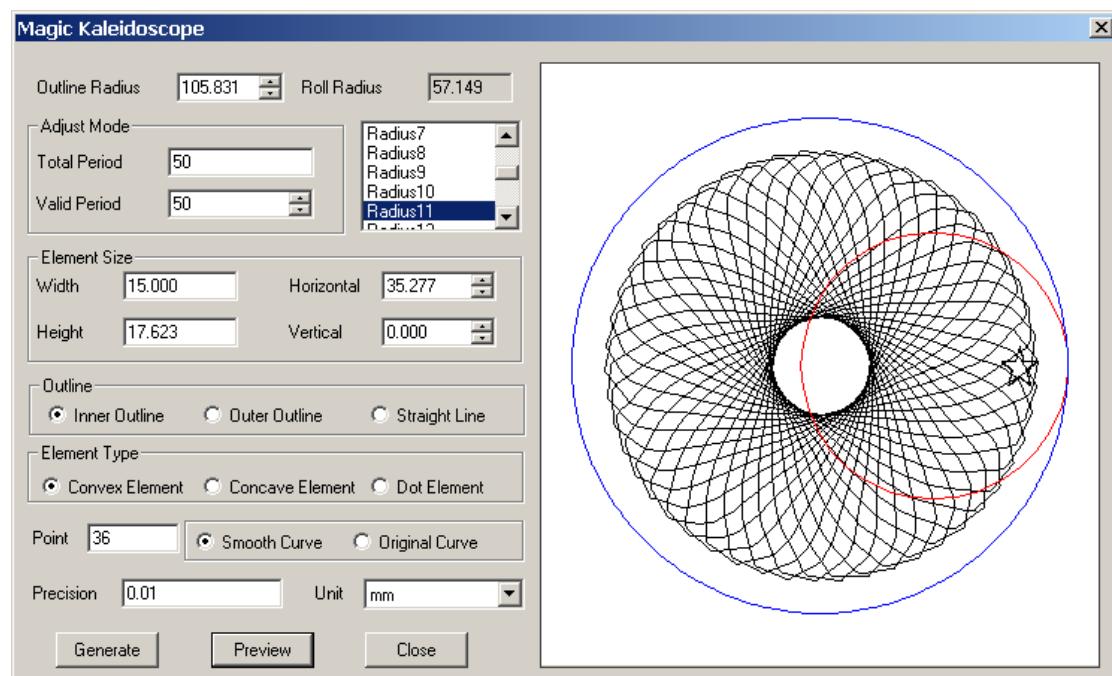


Figure 8-90

1) Settings for outline circle and roll circle

Radii of the outline and roll circles determine the shape, size and period of the kaleidoscope.

Outline Radius: the radius of the outline circle, you can define its value by inputting a number or clicking the adjustment button to select a value.

Roll Radius: the radius of the roll circle. Its value is automatically generated based on the outline radius and total period. The list box in its below provides all available options for you to select.

Total Period: the input period by the user for the motion track of the graphic element.

Valid Period: the period allowed to be set, its value must be an integer no more than the total period. By default, it is the total period.

2) Settings for the graphic element

Width and Height: you can define the width and height of the graphic element through these two options. Different settings will produce various kaleidoscope effects. When the **Element Type** is set to **Dot Element**, these two options are disabled.

Horizontal and Vertical: refer to the horizontal and vertical spacing between the center of the graphic element and that of the roll circle. Taking the center of the roll circle as the origin of coordinate, positive value represents a location on the right or above of the center, and negative value represents a location on the left or below of the center.

Notes:

- ① *For the elements created on the page, when being imported into the Magic Kaleidoscope dialog box, no matter what sizes they are in, they will all be taken as 0 by default. You can define their sizes by changing the **Width** and **Height** values. Click the preview area when you have changed these two values, the modified preview effect will be displayed.*
- ② *All previews are displayed in appropriate proportion, therefore, the outline radius, roll radius and element size represented in the preview are NOT the actual sizes.*

3) Outline setting

Inner Outline: roll circle rolls along the inner side of the outline.

Outer Outline: roll circle rolls along the outer side of the outline.

Straight Outline: roll circle rolls in straight line.

4) Element Type setting

Convex Element: The kaleidoscope describes the motion track of the point on the element that is closest to the tangent point.

Concave Element: The kaleidoscope describes the motion track of the point on the element that moves in even speed.

Dot Element: the element is considered as a dot. The kaleidoscope describes the motion track of the dot.

5) Precision settings

Point: refers to the original points on the track in each period. The bigger the Point value is, the smoother the lines are, but the speed will be slower.

Smooth Curve: the original points are automatically reduced, so as to fit smooth cubic Bezier curve

Original Curve: No fitting for the original points, the pattern is formed by

combining the starts and ends of straight line segments directly.

Precision: refers to the precision for the curve fitting. The bigger the value is, the lower the precision will be.

Unit: options include pt and mm.

Note: *In case that the Magic Kaleidoscope dialog box is opened as no object is selected in the page, the element will be a circle by default.*

8.9 Wave Generator

Sometimes, for the sake of appearance or anti-counterfeit, you may be required to design some overlapping, cycling or symmetrical graphics in the process of designing patterns. These graphics usually bring strong visual impact because of the splendor, complexity and variety. Founder SuperLine 4.60 anti-counterfeit design system uses varying and waving lines as the basic drawing elements. With the wave generator, you can easily gain the splendid guilloche effects provided by wave vibration.

8.9.1 Guilloche Samples

For example, we can use the **Wave Generator** to create such complex graphics as:

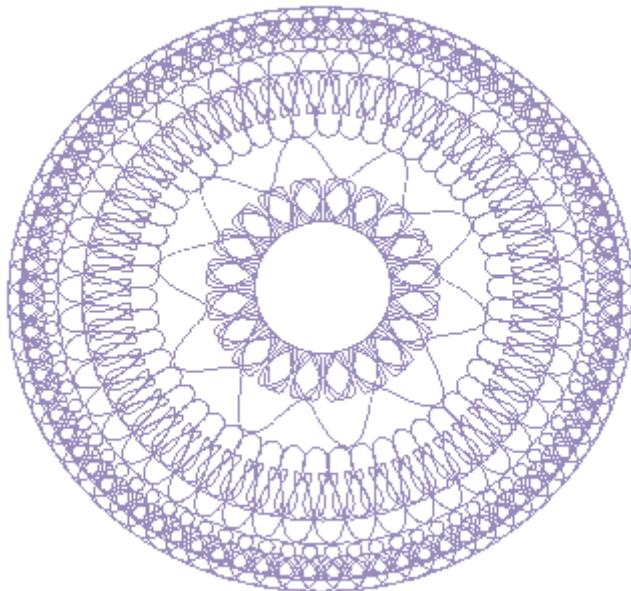


Figure 8-91

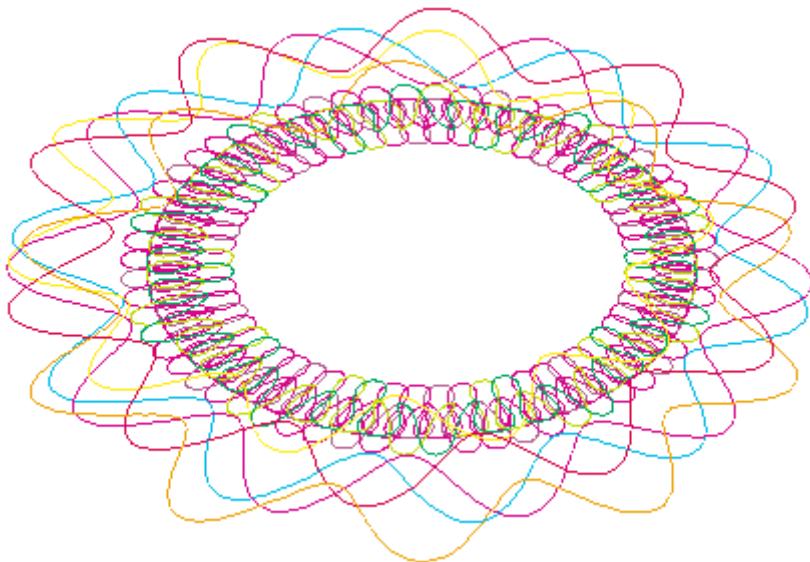


Figure 8-92

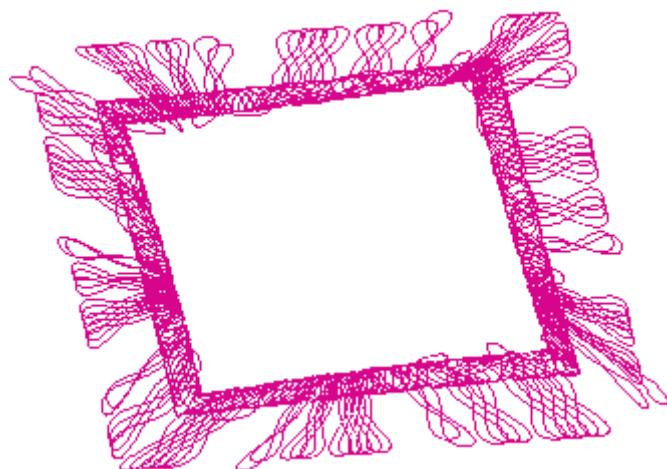


Figure 8-93

Although these figures shown above seem complex, you can create them on your own easily as long as you learn how to use and configure the wave generator.

8.9.2 Basic parameter settings for wave Functions

Select the **Wave Generator** command under the **Effect** menu, and the **Wave Generator** dialog box appears.

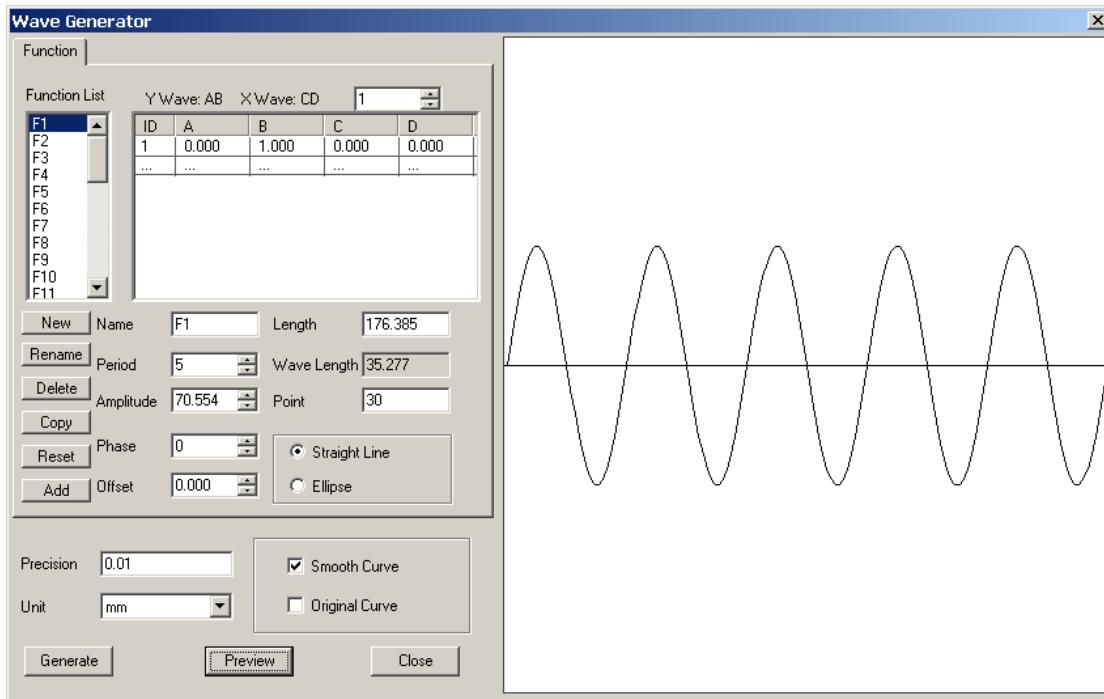


Figure 8-94

Founder SuperLine 4.60 provides you with 30 wave functions, being listed in the **Function List** box, to meet your general needs in pattern design. In addition to this, it also allows you to create, modify, copy or delete functions, so as to gain more custom effects.

1) Create, Edit and Delete wave functions

You can create, edit, copy and delete functions in the **Wave Generator** dialog box.

● Create a function

Click the **New** button. A new function named "Fn" will be generated at the down most line of the **Function List** box, and become selected. The table on the right displays some **coefficient** settings: B1 =1; A1 = C1=D1 =0. And the preview area displays the wave outline of this function.

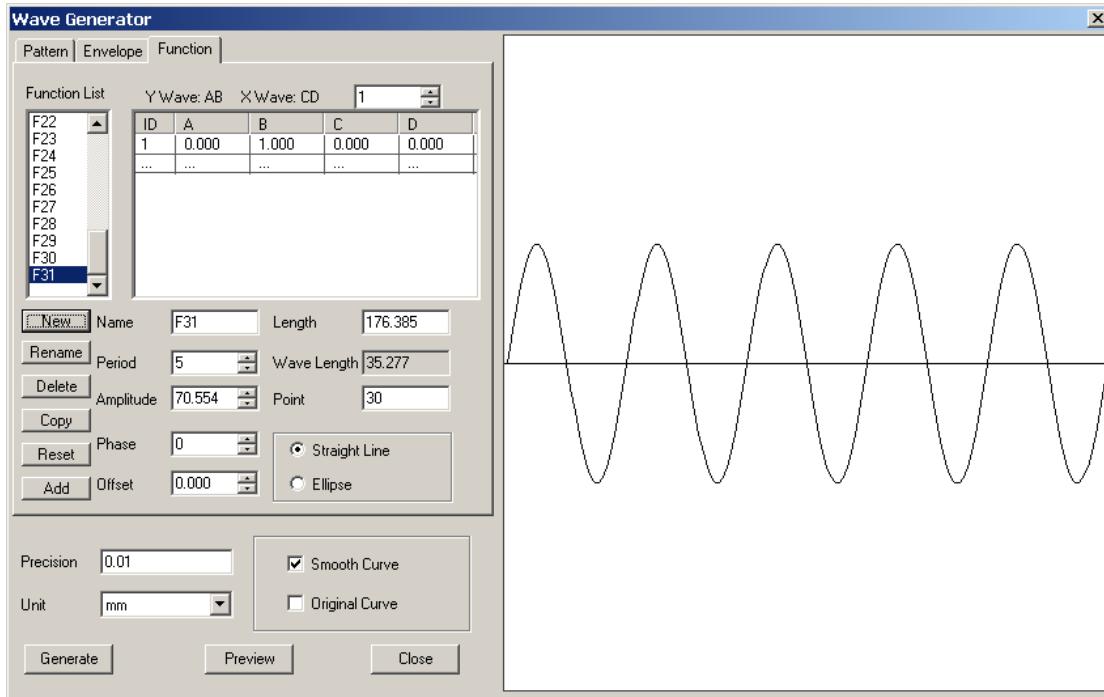


Figure 8-95

To modify the values of A, B, C and D, double-click the corresponding value and enter a new one. For example, you can modify as follows: A1=3, B1=1, C1=2, D1=5, and the new wave will be previewed as:

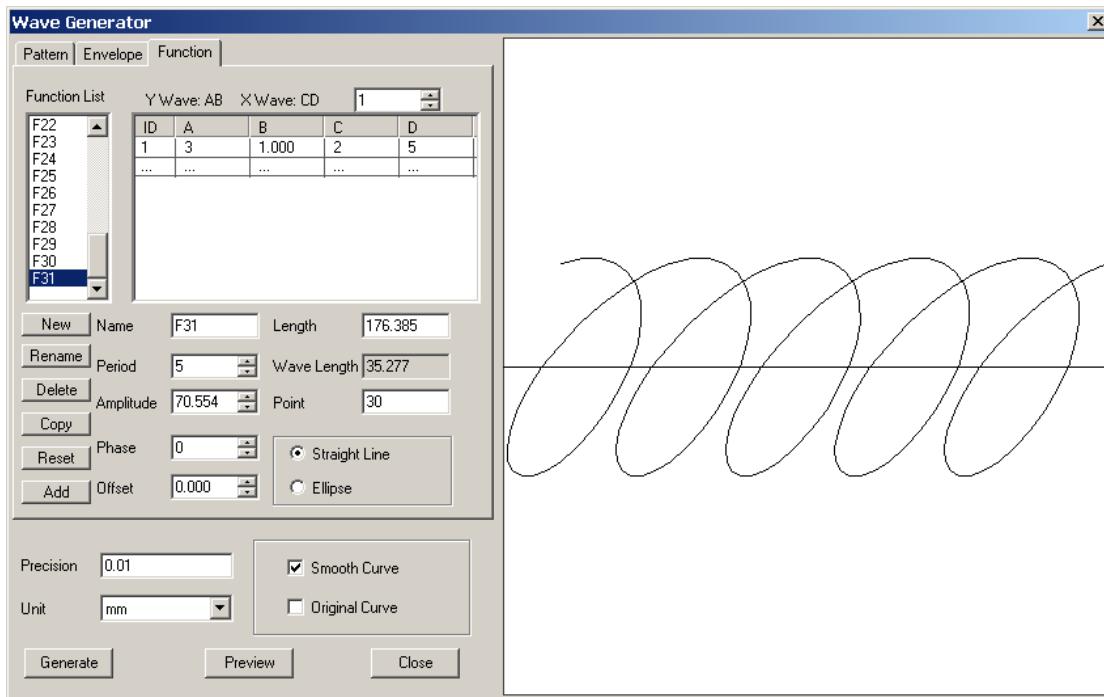


Figure 8-96

You can continue to modify values of such parameters as Length, Period, Amplitude, till you get the satisfied effect. Details on how to set these values are provided in the later sections.

- **Rename a function**

To change the function name, select the function you want to rename, and enter a new name in the **Name** edit box, for example, we input a new name “Wave”, and then click the **Rename** button. See the following figure.

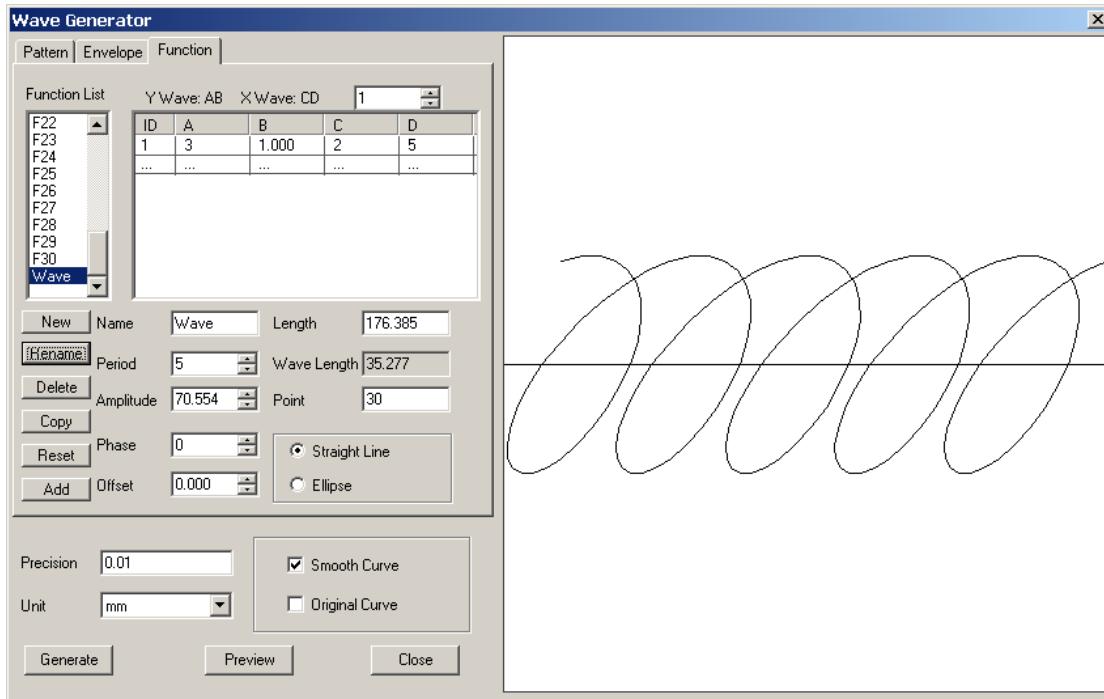


Figure 8-97

- **Delete a function**

Select a function in the **Function List** box and click the **Delete** button to delete.

- **Copy a function**

Select a function in the **Function List** box and click the **Copy** button to copy. The copied function is located at the down most line of the **Function List** box and named as “CopyXXX”. You can change its name by using the **Rename** button.

- **Reset a function**

When the **Reset** button is clicked, the **Function List** box will be restored to include only the original 30 default functions. All the user-defined functions will be removed.

- **Add a function**

When the **Add** button is clicked, functions in the **Function List** box will be displayed in a new order, in which the original 30 default functions are displayed in front of the user-defined functions.

Note: For any of the original 30 functions, if you have changed the settings, but haven't renamed it, the Add operation will automatically restore its default

settings. Therefore, in case that you are creating functions based on a default function, we recommend you to copy it before you perform the add operation.

2) Basic Parameters

Wave lines are the basic elements of the wave patterns. The shapes and directions of these lines are determined by interior wave functions. We can change the basic wave lines by changing the settings of these functions, such as the coefficient values, Length, Period, Amplitude and etc.

● Edit the coefficient table

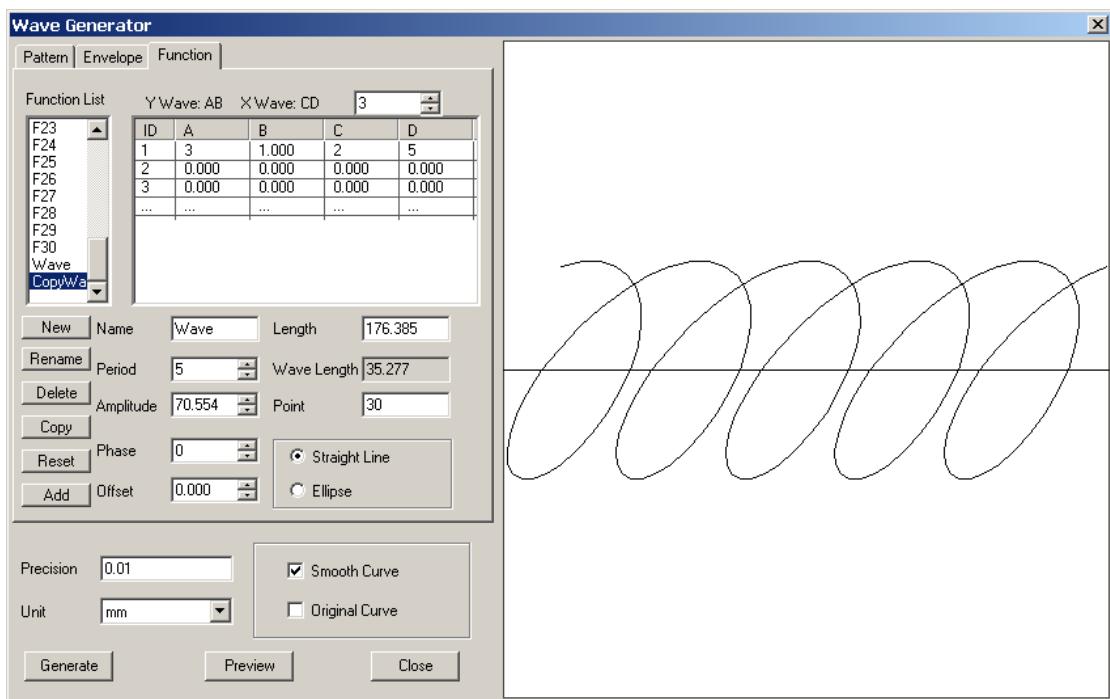


Figure 8-98

In the figure above, the coefficient table refers to the table on the right of the Function List. The coefficient values in this table determine the shape of the basic waves. On the upper-right of the table, there is an edit box. The number in the box controls the lines available in the table.

Add or reduce lines: to add or reduce lines in the table, directly input a line number in the "Y Wave: AB X Wave: CD" edit box, or click the button to select a line number, and then click anywhere in the table.

Take the figure above as an example, if we change the line number "3" to "4", and then click in the table, the lines in the table will count to 4, see the following figure.

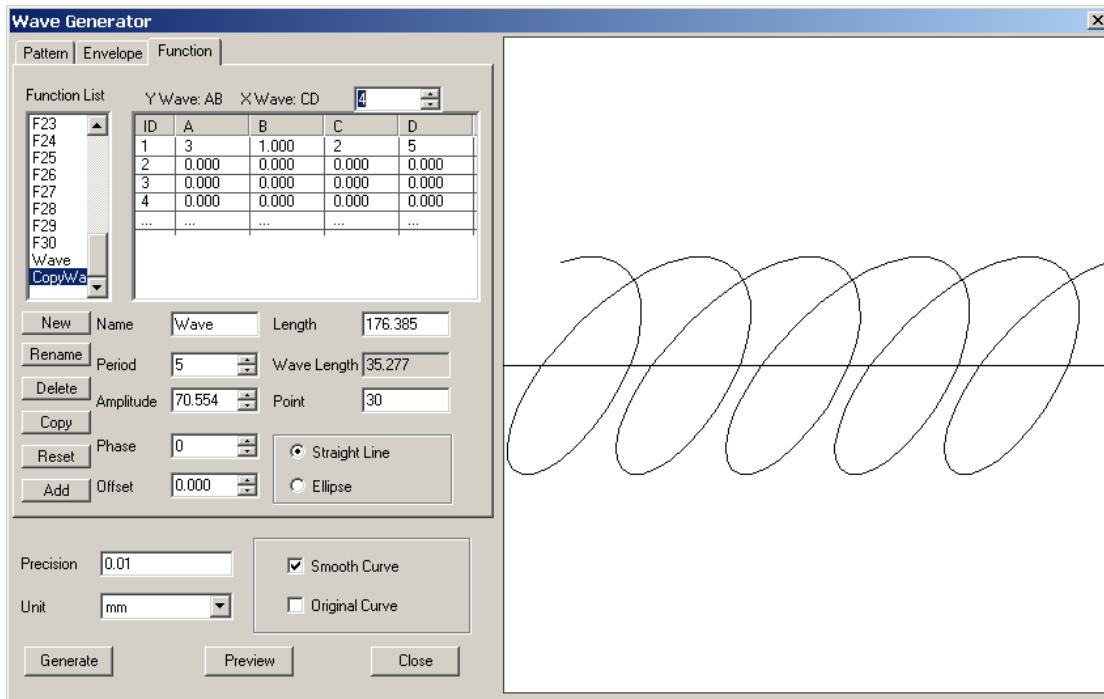


Figure 8-99

The A, B, C and D values for the new added lines are all set to 0 by default. To change their values, you can double-click the corresponding value to make it selected, and then directly input a new value. For example, we can make a change as: A=4, B=C=0, D=5.

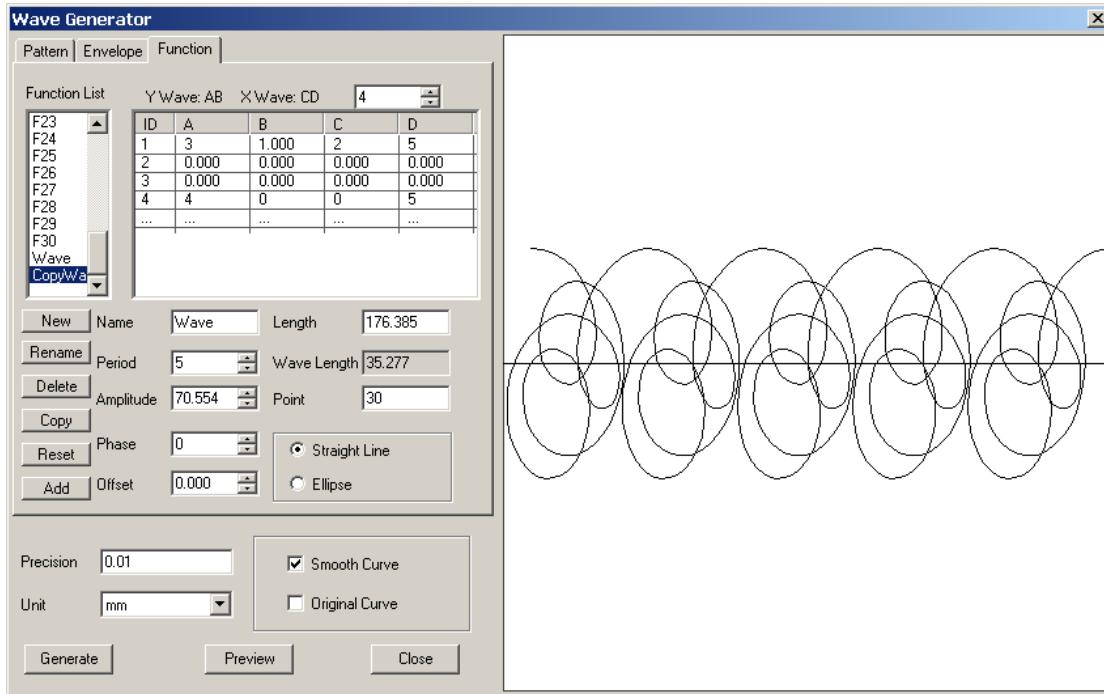


Figure 8-100

Note: Valid value in the "Y Wave: AB X Wave: CD" edit box is 1~20.

3) Other Parameters

Length: the total length of the wave you want to create. When it is applied to an ellipse, it represents the perimeter of the ellipse. Valid value is 4-2000.

Period: refers to the period of the current function, the value can be an integer larger than 0. The following figures display the previewed waves when it is set to 4 and 6:

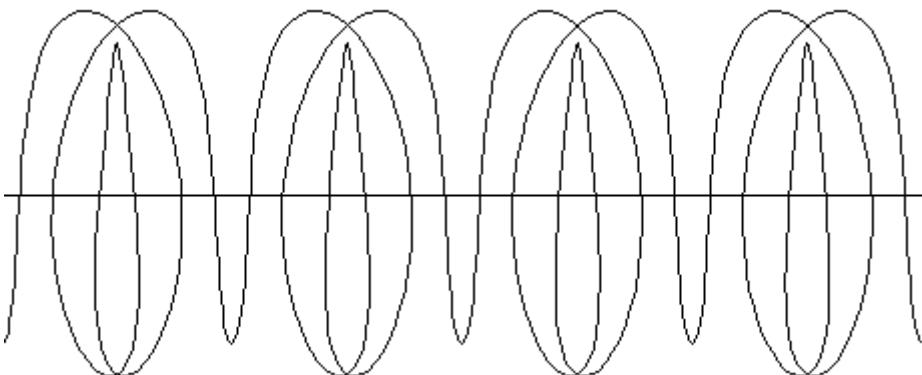


Figure 8-101

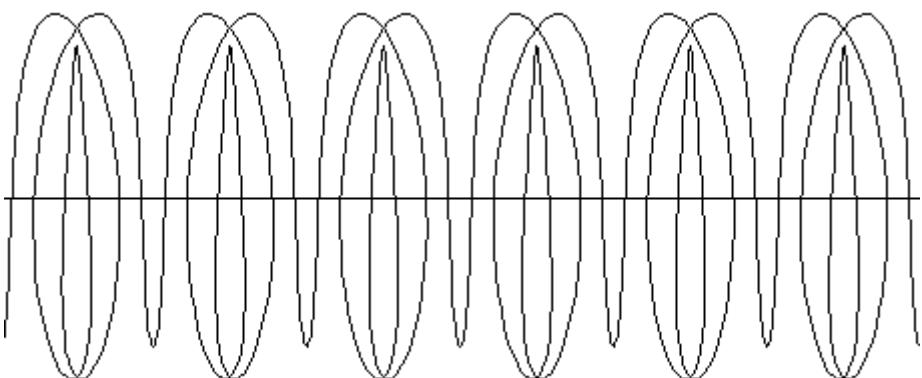


Figure 8-102

Wave Length: calculated by dividing the **Length** by the **Period**.

Amplitude: can be set to any real number, representing the height of the current wave. The following figures display the previewed waves when it is set to 50 and 80:

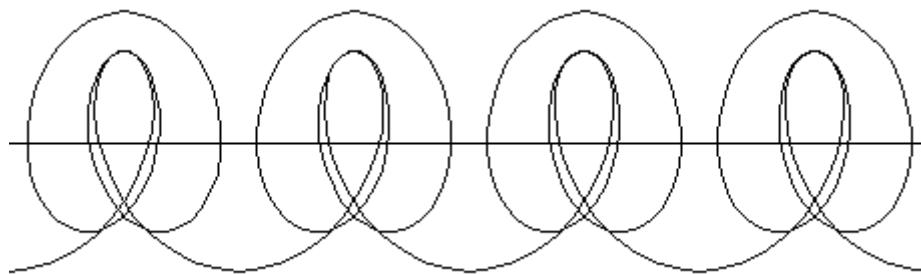


Figure 8-103

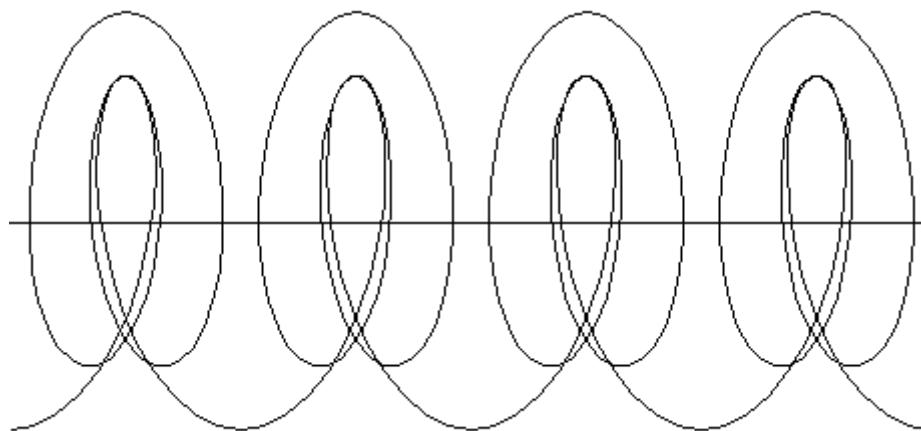


Figure 8-104

Point: represents how many points a period consists of. For example, if the period is set to 5, and the point is set to 30, then the total points of the graphic will be $30 \times 5 = 150$. It can be set to an integer between 24~ 100.

Phase: representing the horizontal starting location of the wave. 100 is a period, valid value for this parameter is an integer between -100~100. When it is a positive value, the starting location moves rightward; and when it is a negative value, it moves leftward. If it is set to "-100", or "0", or "100", the starting location stays at a same place, the initial place for a complete period. The following figures display the previewed waves when it is set to 0, 5 and -5:

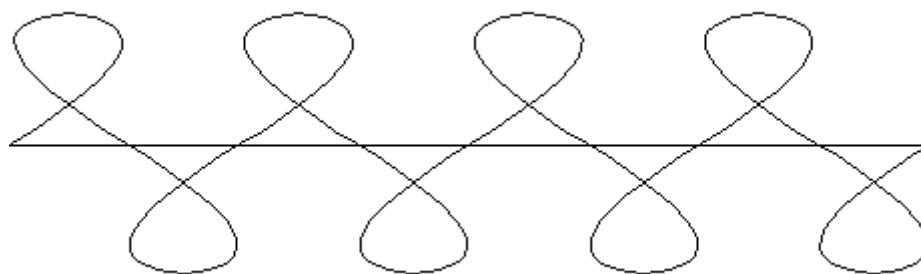


Figure 8-105

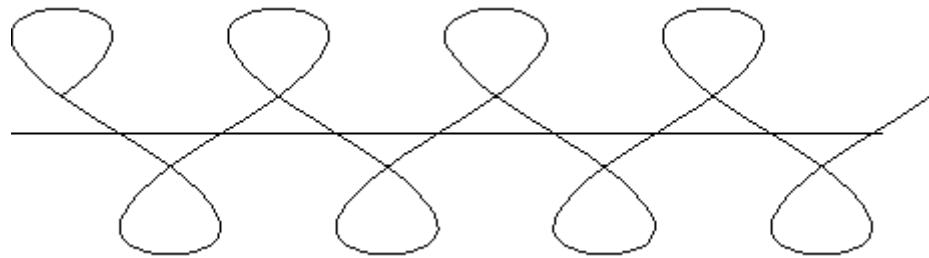


Figure 8-106

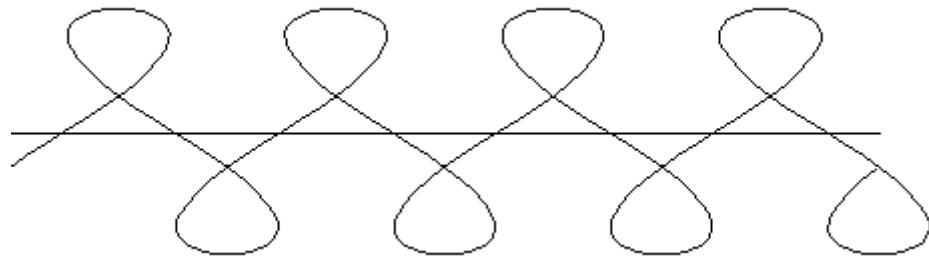


Figure 8-107

Offset: representing the vertical offset of the wave, can be set to any real number. When it is a positive value, the whole wave offsets upward; and when it is a negative value, it the whole wave offsets downward. The following figures display the previewed waves when it is set to 0, 20 and -20:

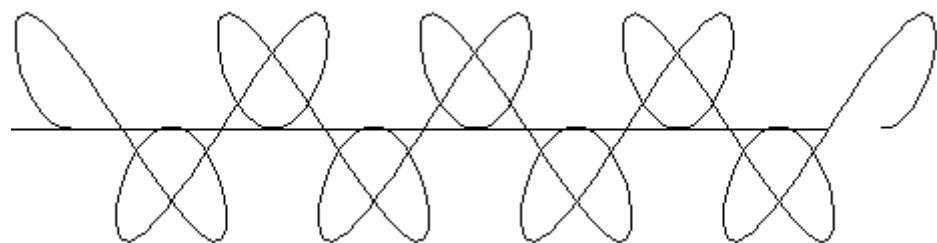


Figure 8-108

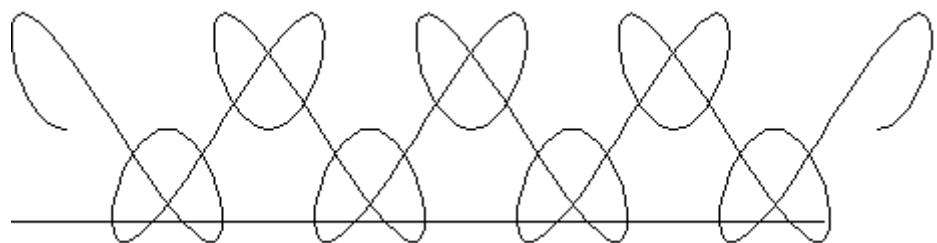


Figure 8-109

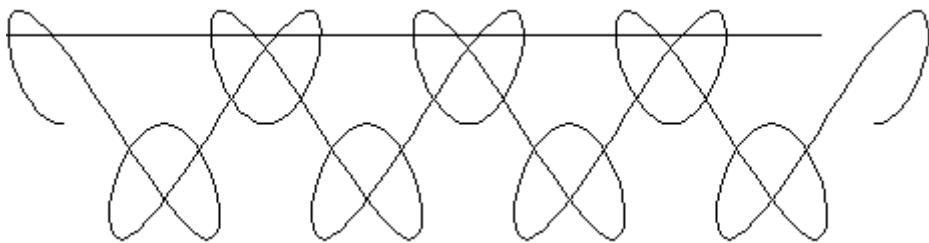


Figure 8-110

Straight Line: waves are arrayed in straight line.

Ellipse: waves are arrayed in ellipse.

Precision: refers to the precision for fitting the Bezier curves. The smaller the value is, the smoother the curve will be. The value can be set to 0.01-10.

Note: *If you want to gain accurate and smooth graphics, please set this value to a comparably small value.*

Unit: the unit for the Length, Wave Length, Amplitude and Offset values. Options include mm and pt.

Smooth Curve: to fit all points to form a Bezier curve, so as to make the curve smoother.

Original Curve: to connect points with straight lines. When points are small in quantity, the generated curve will be NOT so smooth that sawtooth may appear.

Note: *If you specify too few points, the graphic generated will be NOT smooth and accurate enough. But if you specify too many points, the speed for generation and preview will be slower while the quality of the graphic is improved.*

8.9.3 Generate Outlines

In this section, we will introduce you to the method of generating an outline while such a graphic object on the page as straight line, Bezier curve, circle or ellipse, polygon, freehand drawing and closed curve, is selected.

1) Method for generating an outline

Create a graphic element on the page, and make it selected.

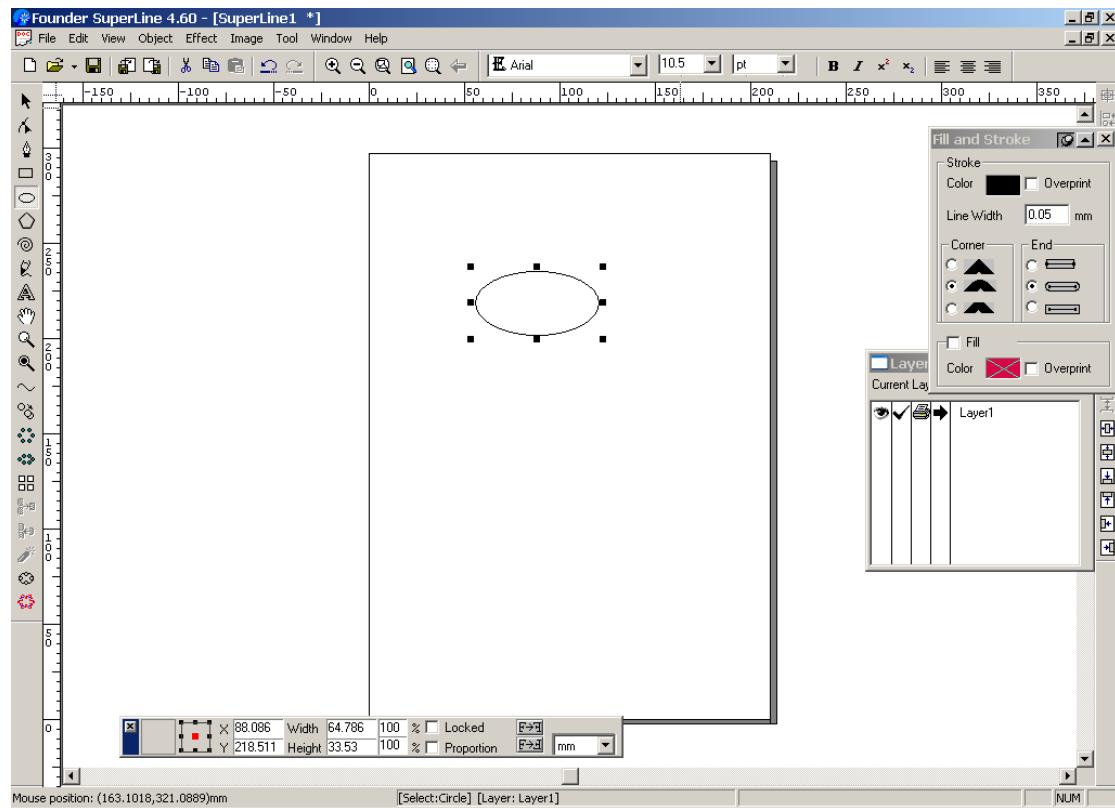


Figure 8-111

From the menu, select **Effect** → **Wave Generator** to open the following **Wave Generator** dialog box.

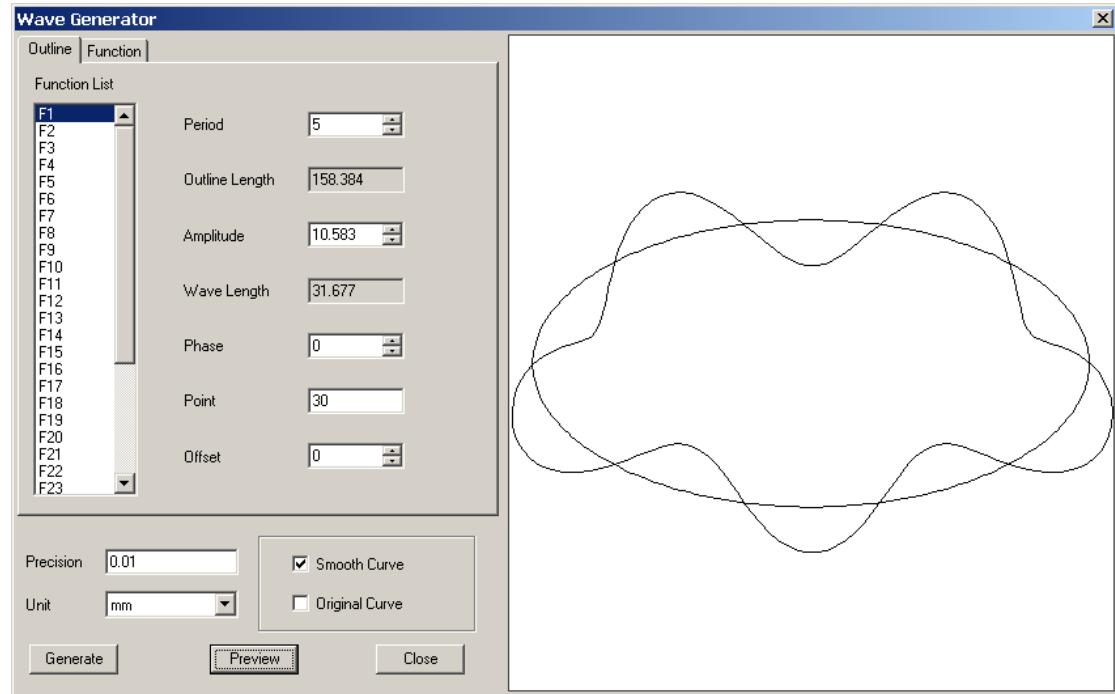


Figure 8-112

The ellipse in the right preview area represents the one created just now on the page. The curve waving around the ellipse is the wave pattern determined by current parameter settings. You can change the outline pattern by switching to

another function or modifying the settings of the currently selected function.

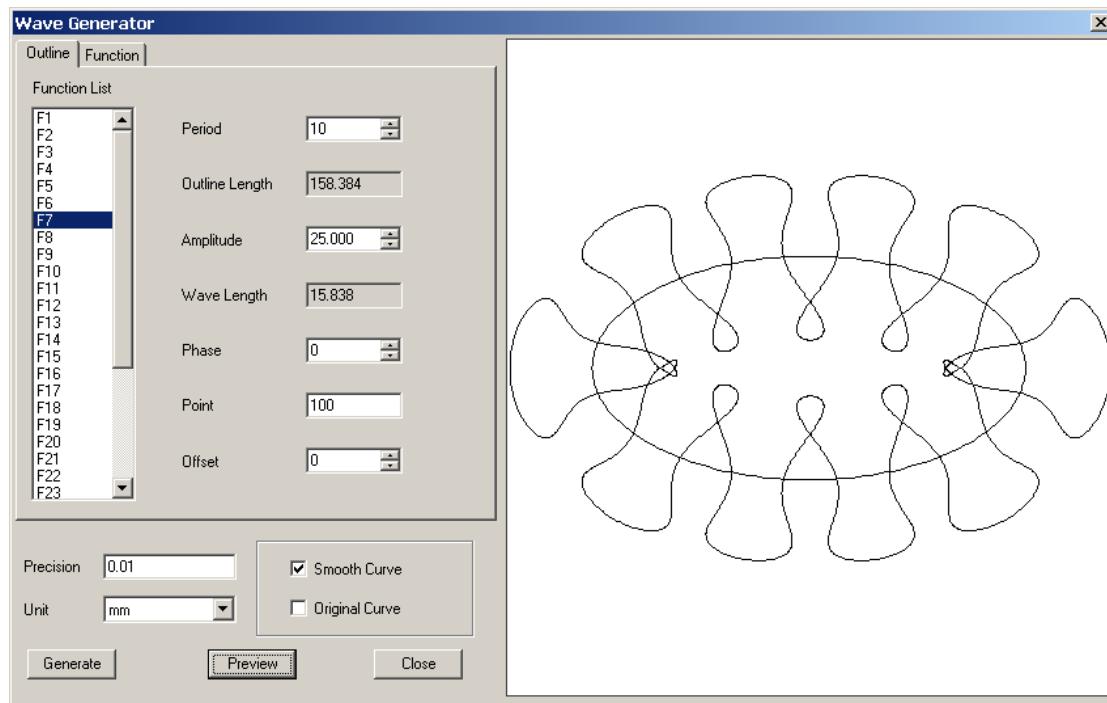


Figure 8-113

Click **Generate**, the newly created outline will automatically appear at the lower-left corner of the page.

2) Parameter settings for outline

Method for setting outline parameters is the same as that for setting the basic parameters of the wave functions. Here we only discuss their difference.

● Function List

The options in this list are completely loaded from the **Function List** under the **Function** tab. In the **Outline** pane, you cannot add, edit or delete functions. Whenever a function is selected, the corresponding pattern in the preview area will simultaneously change.

If you want to change the settings of some functions, switch to the **Function** pane by clicking the **Function** tab in the **Wave Generator** dialog box, follow the descriptions provided in Section 8.9.2 to perform.

● Outline Length

Refers to the perimeter of the graphic element created on the page. This parameter is NOT available for being edited in the **Wave Generator** dialog box.

● Wave Length

The **Wave Length** value is calculated by dividing the **Outline Length** value by the **Period** value.

● Generate

Click this button to generate the outline on the page.

8.9.4 Generate Envelopes

In this section, we will introduce you to the method of generating an envelope while two graphic objects on the page are selected together, such as straight line, Bezier curve, circle or ellipse, polygon, freehand drawing and closed curve.

1) Method for generating an envelope

(1) Create two graphic elements on the page, and make them selected.

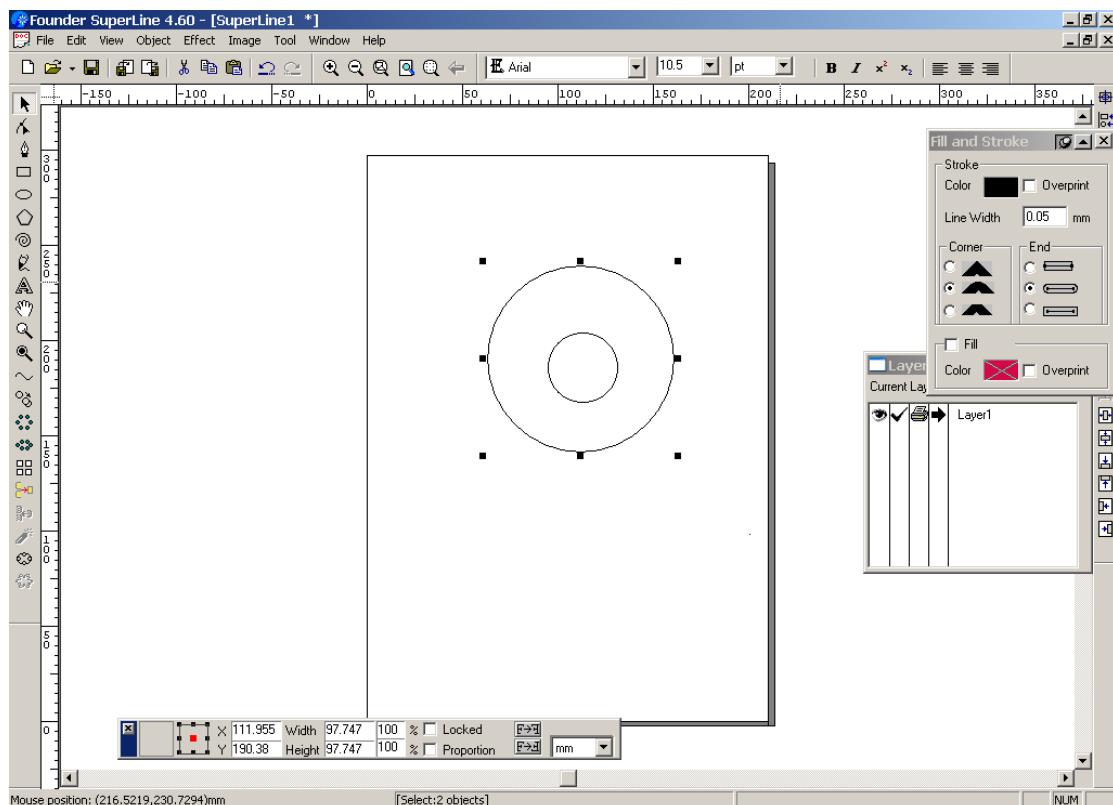


Figure 8-114

(2) From the main menu, select **Effect** → **Wave Generator** to open the **Wave Generator** dialog box as shown in the following figure.

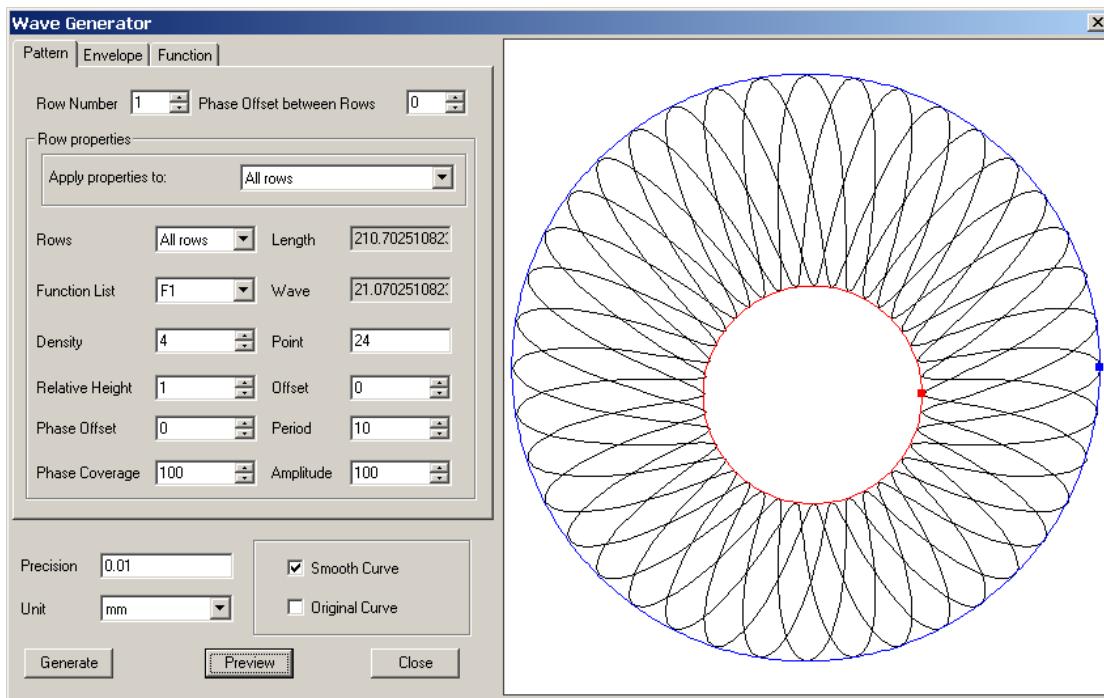


Figure 8-115

(3) In the dialog box above, you can design a variety of patterns with ease. For instance, you can base on the outline as shown in the above figure to design the following patterns.

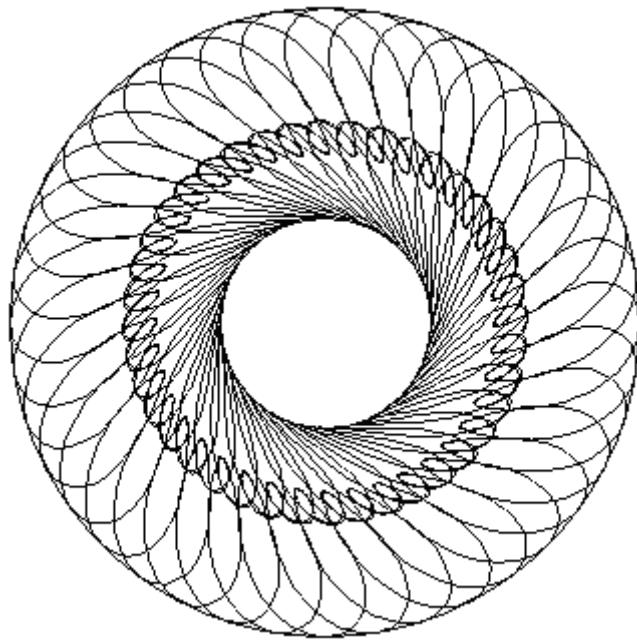


Figure 8-116

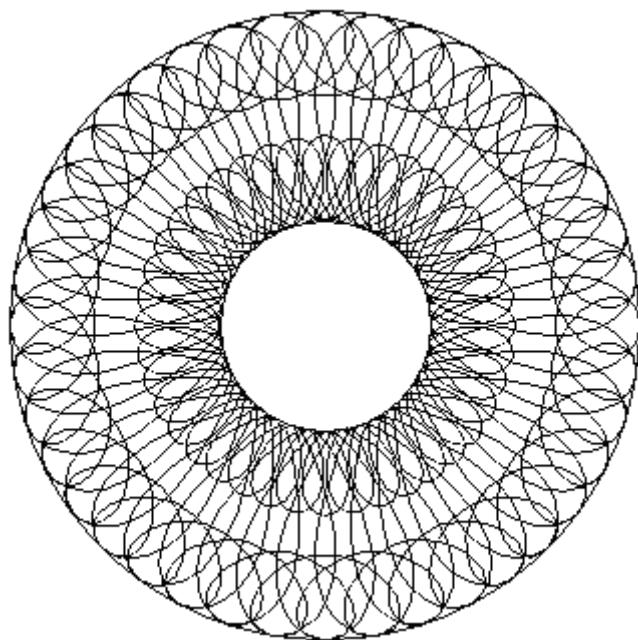


Figure 8-117

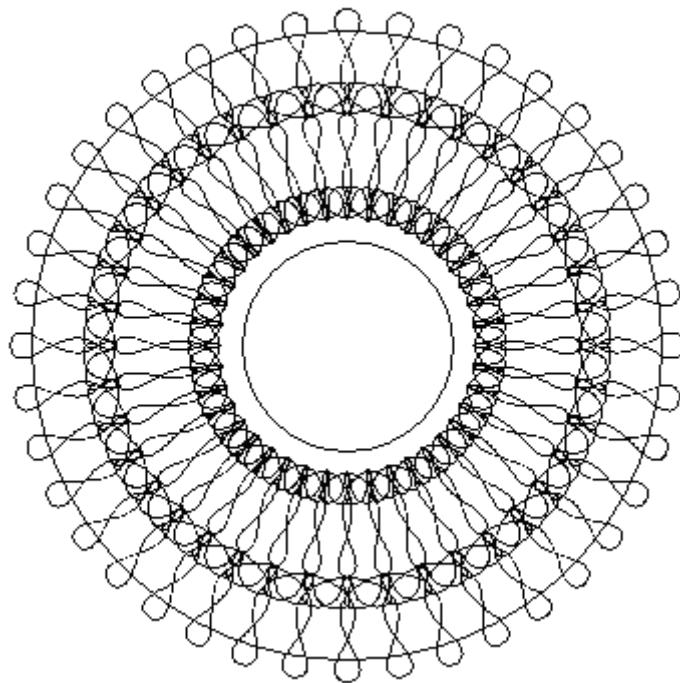


Figure 8-118

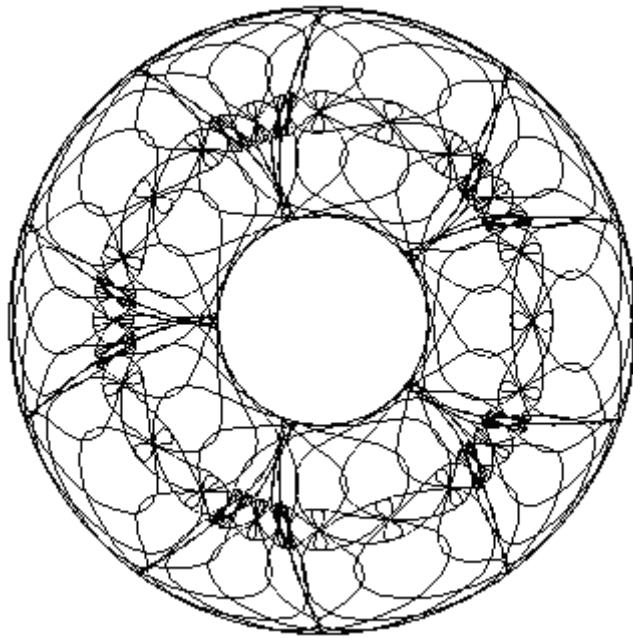


Figure 8-119

(4) Click **Generate**, and the newly created wave pattern will automatically appear on the page.

Now we discuss the settings of the related parameters. The **Wave Generator** dialog box shown here is composed of three panes: **Pattern**, **Envelope** and **Function**. Among them, method for setting parameters in the **Function** pane is same as that described in Section 8.9.2.

2) Set the Pattern parameters

Parameters in the **Pattern** pane enable you the selection from functions, and the adjustment of the pattern shape (including density, arrangement, period, amplitude and offset).

To introduce the parameters in the **Pattern** pane, we take the case when the following two elements are both selected as examples.

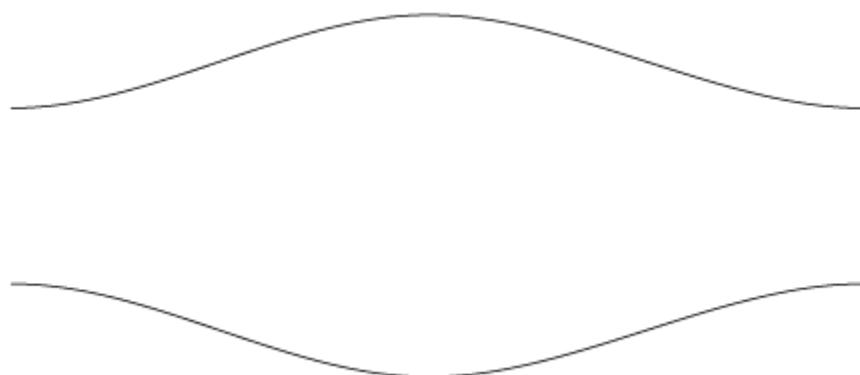


Figure 8-120

Row Number: refers to the number of rows contained in the generated envelope pattern. The following figure displays the effect when the row number is set to 1.

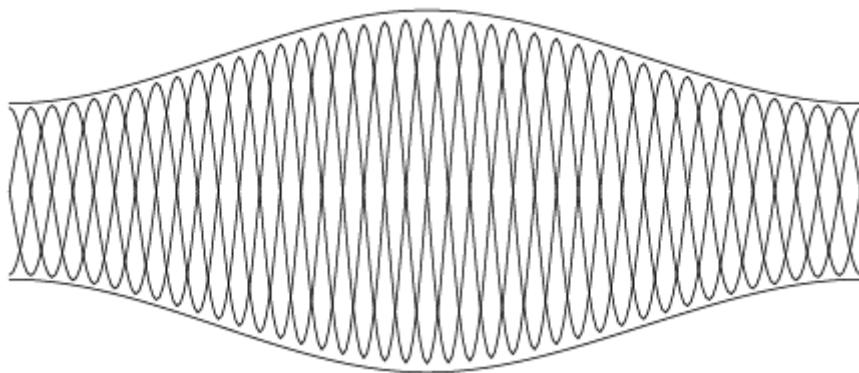


Figure 8-121

And when the row number becomes 3, the effect switches to:

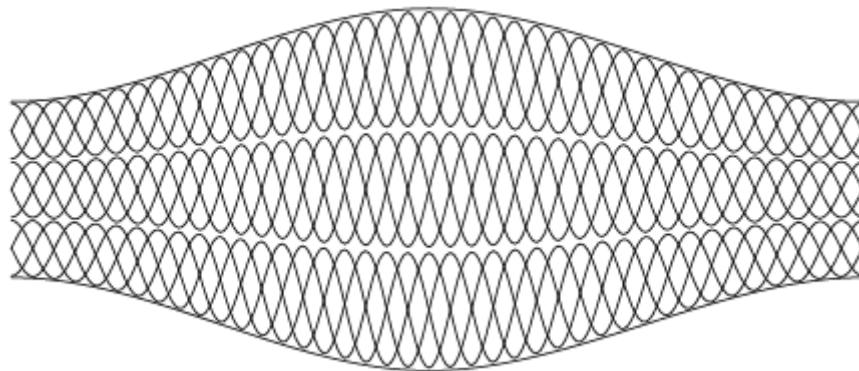


Figure 8-122

Phase Offset between Rows: the phase offset between the adjacent rows. You can set it to a value ranging from -100% to 100%. 100% represents the offset of a whole period. For example, when the value is set to 0%, the effect will be displayed as follows:

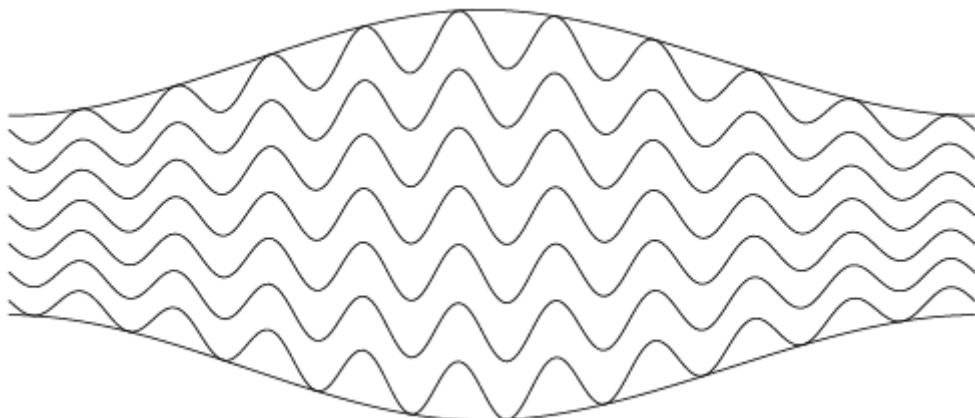


Figure 8-123

When the value is set to -25%:

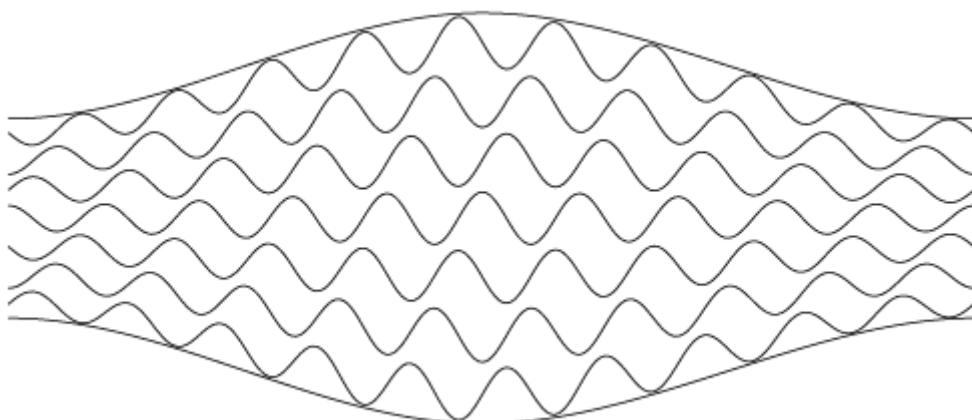


Figure 8-124

And when the value is set to 50%:

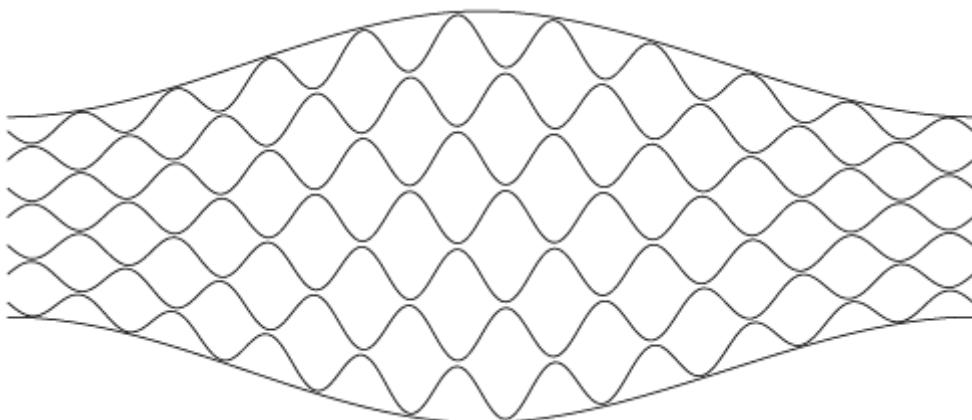


Figure 8-125

Apply properties to: When you select **All rows**, all rows in the pattern will be applied with the same function, and they will have the same properties. When you select **Odd/Even row**, you can separately define the properties for the odd and even rows. And when you select **Each row**, the properties for each row can be individually defined.

The following figure shows an example when the properties of odd and even rows are separately defined.

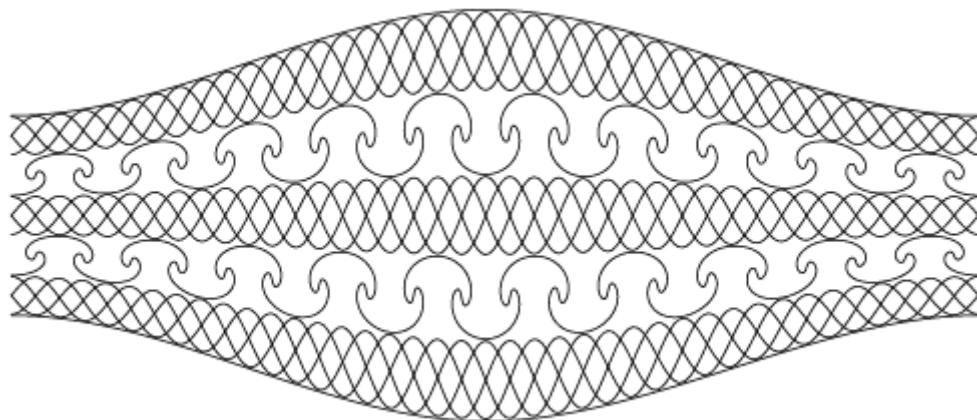


Figure 8-126

Rows: enables you to set the properties of the specified row(s). Available options in the dropdown box are determined by the configuration of the **Apply properties to** parameter.

Function List: options provided in this list determine the curve type filled in the row(s) of the pattern.

Density: You may need to use one or more curves to fill the pattern in the specified row. The density value means the number of the curves. For example, when the density value is set to 1, the effect appears as follows:

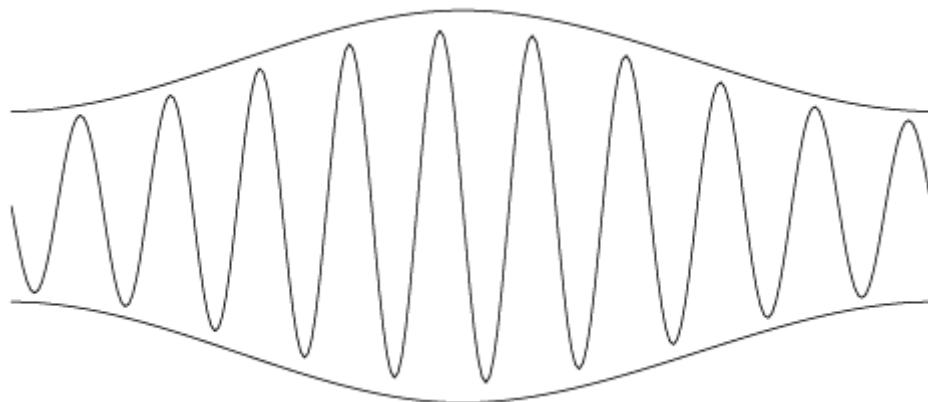


Figure 8-127

When the density value is set to 2:

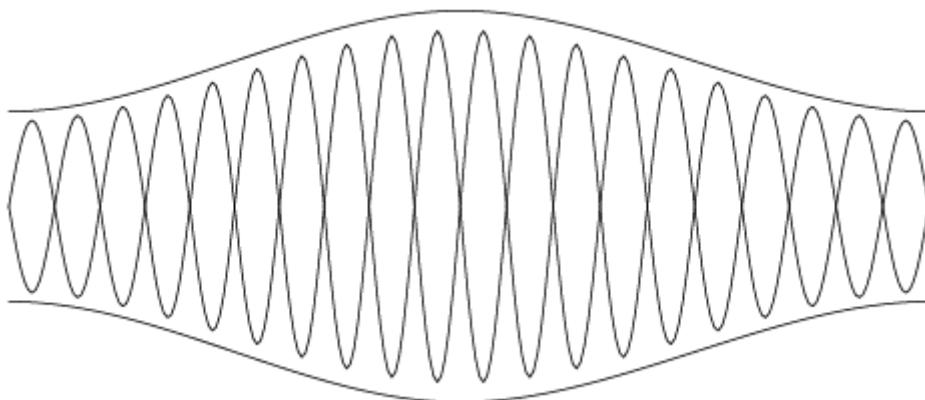


Figure 8-128

And when the density value is set to 4:

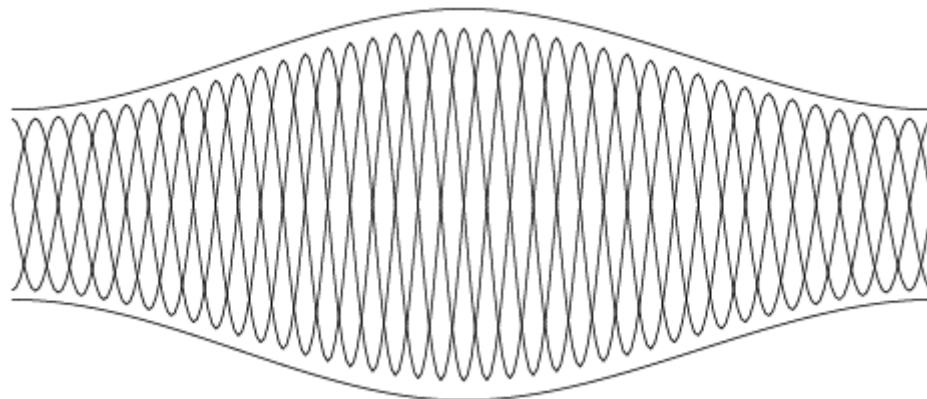


Figure 8-129

Relative Height: refers to the ratio of the pattern height of one row to that of other row(s). You can specify a relative height for each row. And SuperLine will automatically calculate actual height of each row based on the ratios. The edit box on the right accepts only integer bigger than 0.

The following figure shows an example when the relative height of the odd rows is set to 2 and that of the even rows is set to 1, i.e. the pattern in the odd rows is twice the height of that in the even rows.

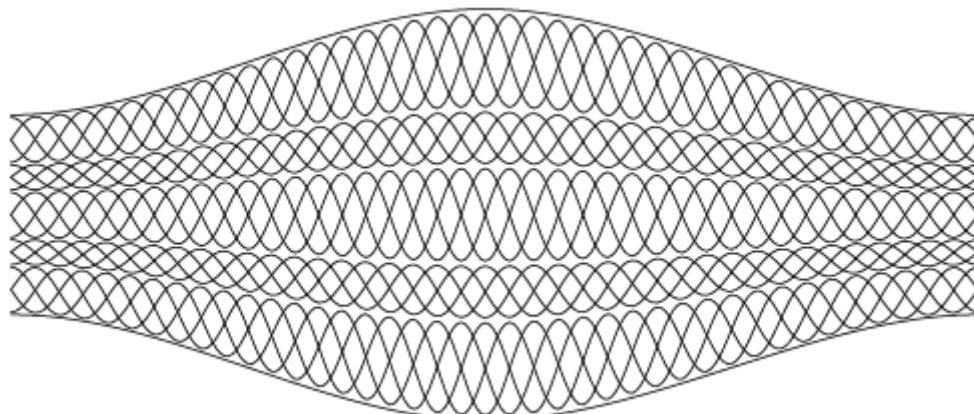


Figure 8-130

Phase Offset: refers to the horizontal phase offset of the curve. You can set it to a value ranging from -100% to 100%. 100% represents the offset of a whole period in the horizontal direction.

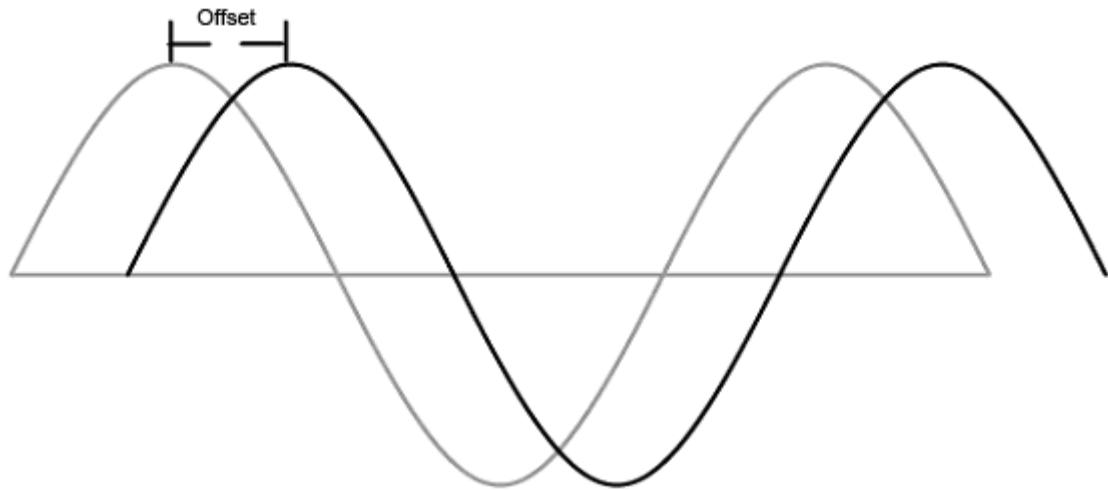


Figure 8-131

Phase Coverage: This parameter controls the percentage of the phase distribution to the total periods for all curves in the specified row(s). 100% means that all curves are uniformly distributed in a row. The following figure shows the effect when this value is set to 50%:

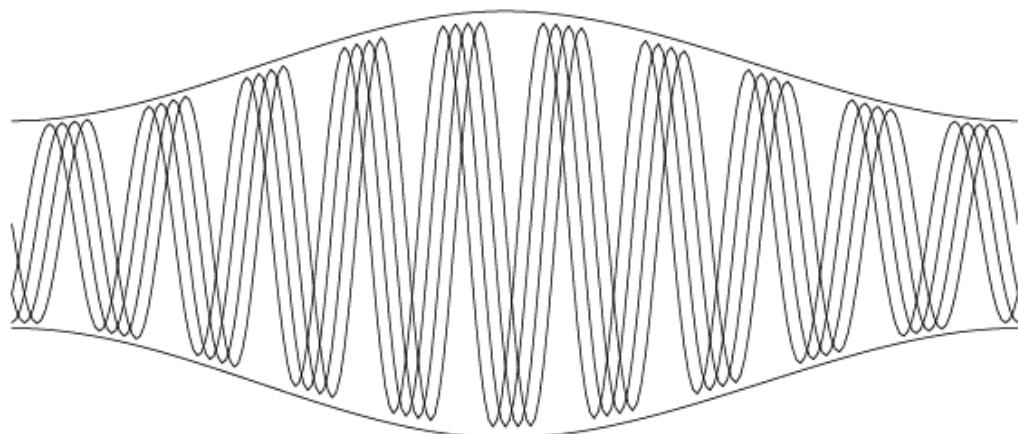


Figure 8-132

And when it is set to 100%:

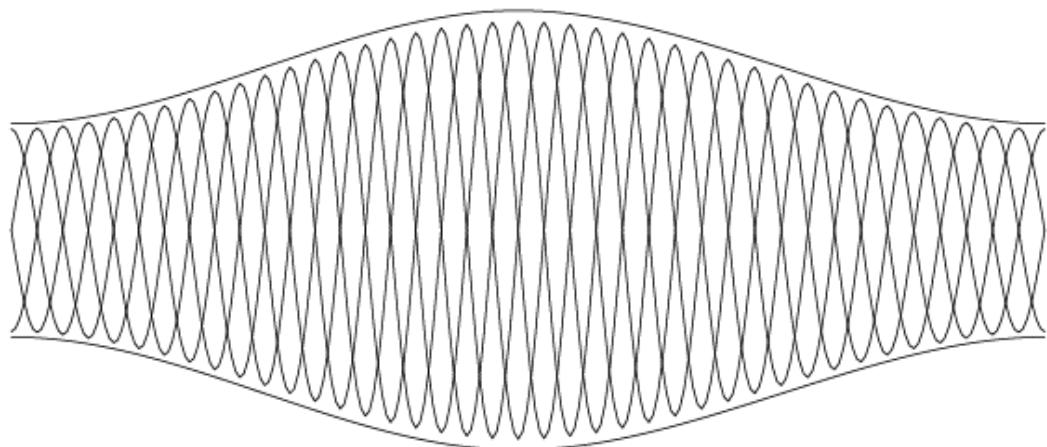


Figure 8-133

Length: the length between the centers of the two elements.

Wave: This parameter is dependent on the **Length** and **Period**. Its value is the result of dividing the **Length** value by the **Period** value.

Point: Number of the sampling points for calculating curves in rows, in theory, more points can generate smoother curves, but the speed may be slower

Offset: refers to the vertical offset against the original location in each row. You can set it to a value ranging from -100% to 100%. 100% represents the offset of a whole period in the vertical direction. For example, when this value is set to 0%, the effect will be shown as:

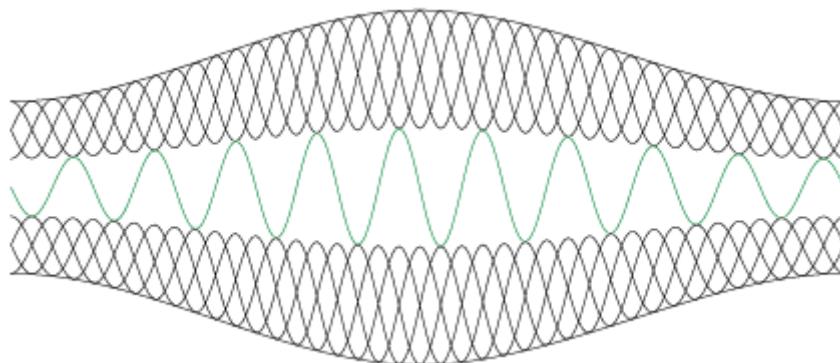


Figure 8-134

When it is set to -30%:

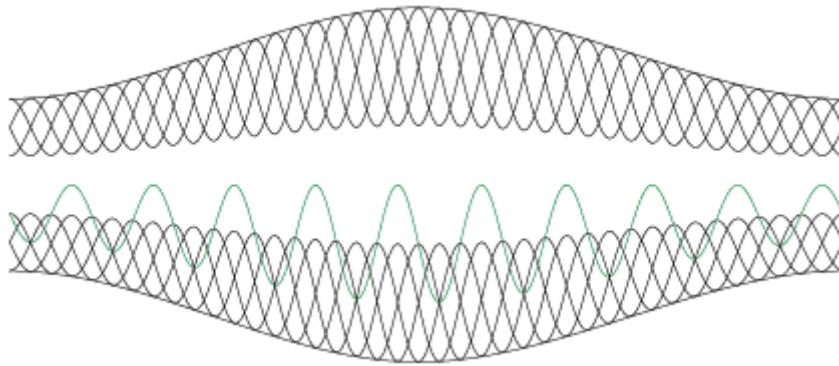


Figure 8-135

And when it is set to 50%:

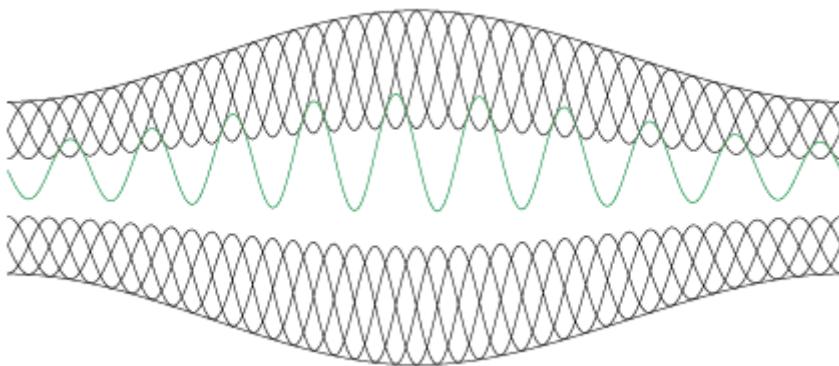


Figure 8-136

Period: the frequency of the appearances for the curve in the row. The following figure shows an example when the periods for three rows are respectively set to 5, 10 and 20.

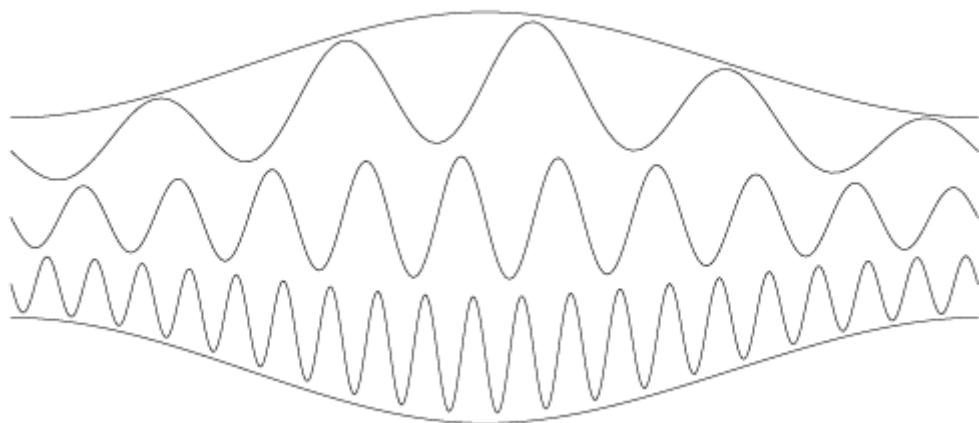


Figure 8-137

Amplitude: refers to the vertical height coverage in a row. Together with the relative height introduced above, the actual height of the pattern in each row can be calculated. The value range for this parameter is 0%~200%. 100% means that the actual height is equal to the assigned height in advance. For example, when this value is set 100%:

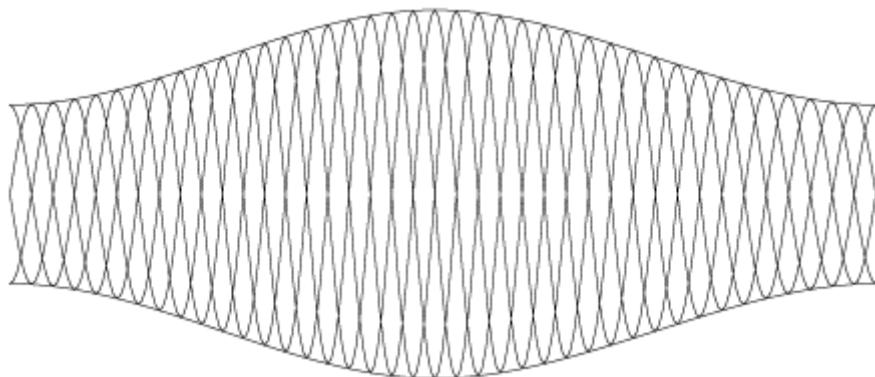


Figure 8-138

When this value is set 80%:

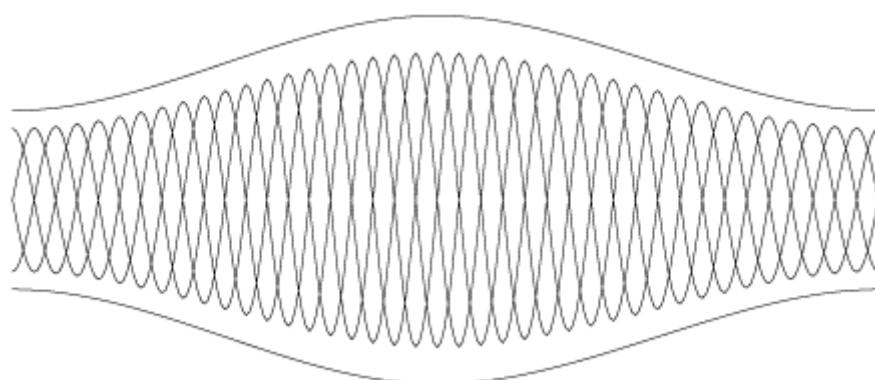


Figure 8-139

And when this value is set 120%:

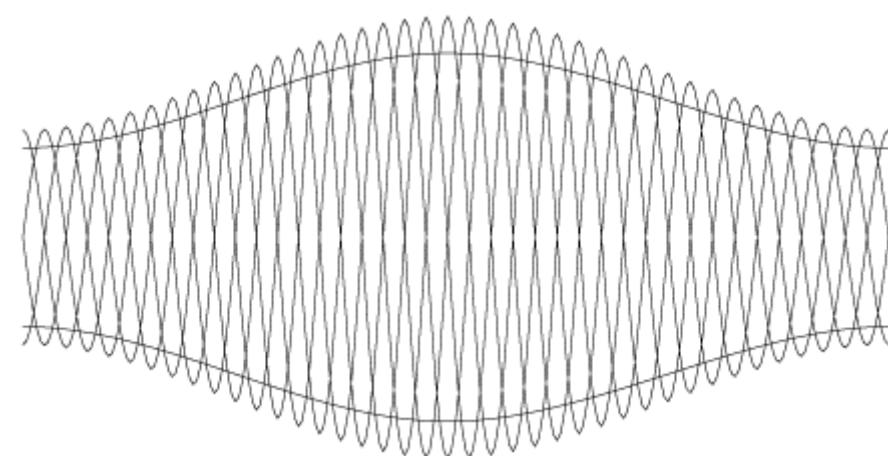


Figure 8-140

For details on **Precision**, **Unit**, **Smooth Curve** and **Original Curve**, refer to related descriptions in Section 8.9.2.

3) Set the Envelope parameters

Parameters in this pane enable you to control the rotation of the wave pattern, the distribution of the curves, and the period of transform.

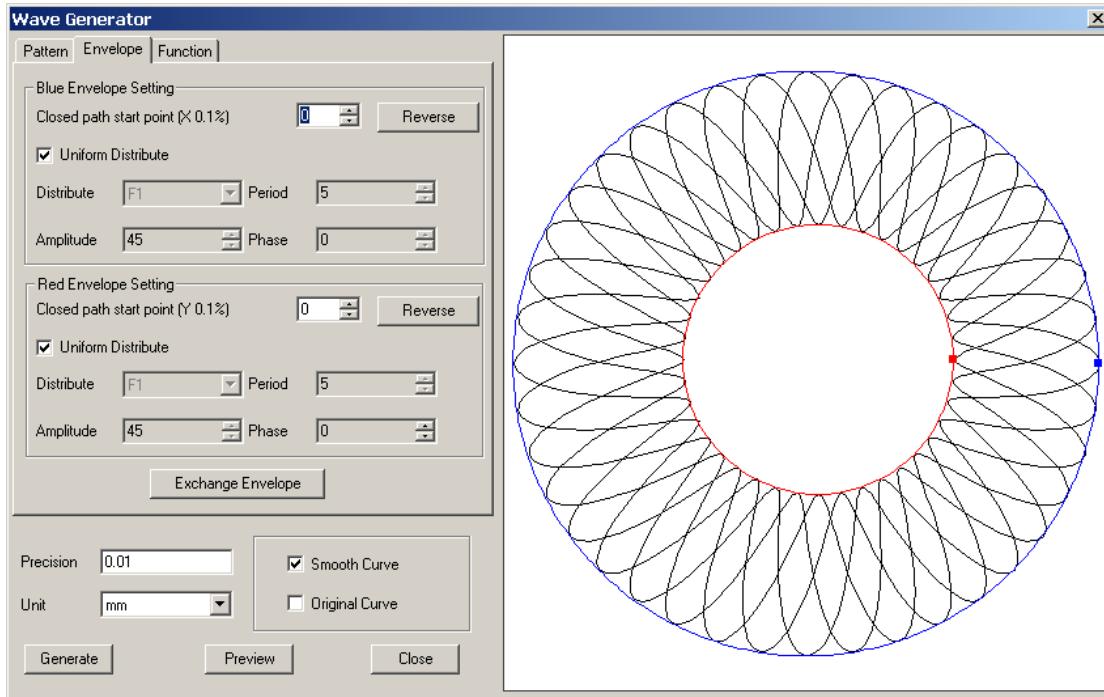


Figure 8-141

● Blue Envelope Setting

“Blue Envelope” refers to the blue circular track as shown in the above figure. Parameters in this area control the period, amplitude and phase of the pattern on the blue track.

Closed path start point: refers to the little blue square block as shown in the above figure. SuperLine assumes it as the starting point of the wave curve. Valid value ranges -100%~100%.

For open curves like a straight line, it's easy to find out the start point. But for closed curves like an ellipse, it becomes quite difficult. Moreover, the start point of a closed curve moves when being rotated. As a result, the start points of the two envelope paths will appear at two different places, creating the distorted guilloche. The following figure shows an example when the start point of a closed path is set to 12.

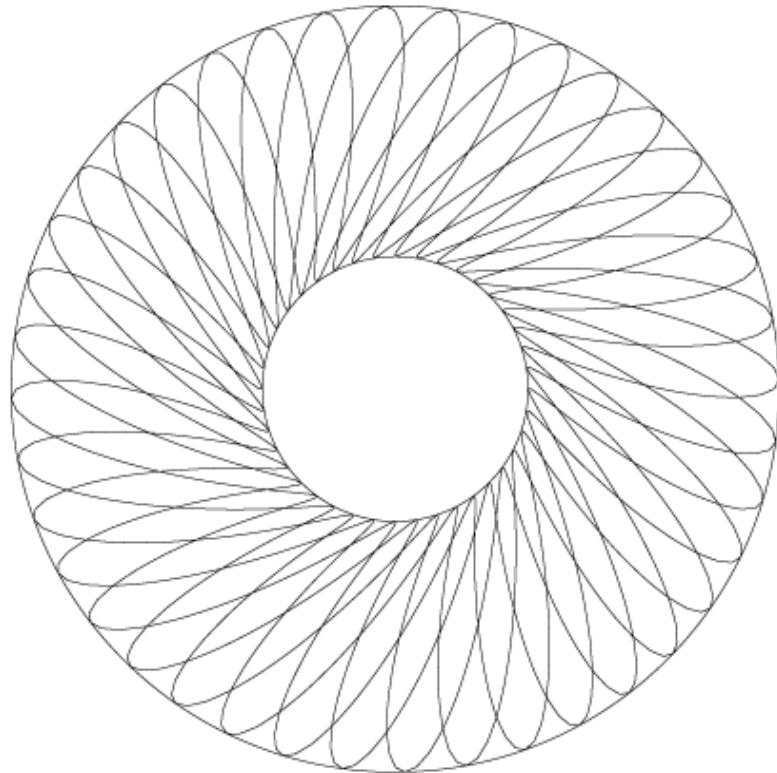


Figure 8-142

Reverse: You can reverse the directions of the two envelope paths by clicking this button.

Uniform Distribute: When this option is checked, curves are distributed completely according to the property settings in the **Pattern** pane. If you uncheck it, you will activate the options on its below, with which you can change the period, amplitude and phase for the distribution of the curves, as well as the function determining the pattern applied.

Distribute: each function in this dropdown list specifies one rule for the density change. You can change the pattern shape by shifting to another function.

Period: the period for the density changes of the wave curve. For example, when the period is set to 5:

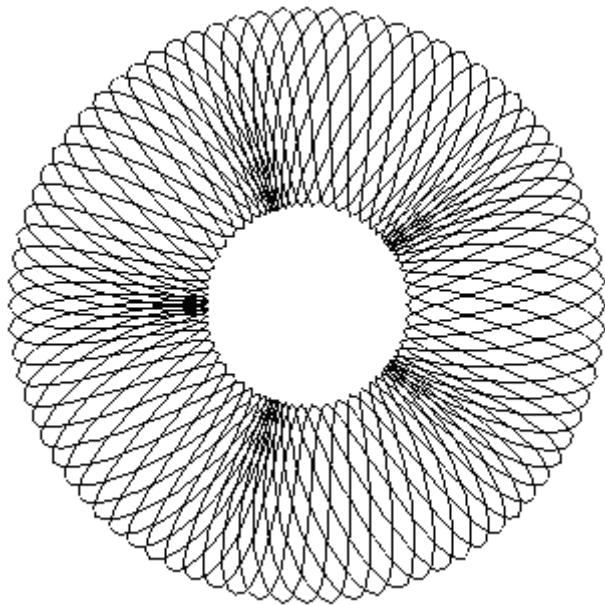


Figure 8-143

And when the period is set to 8:

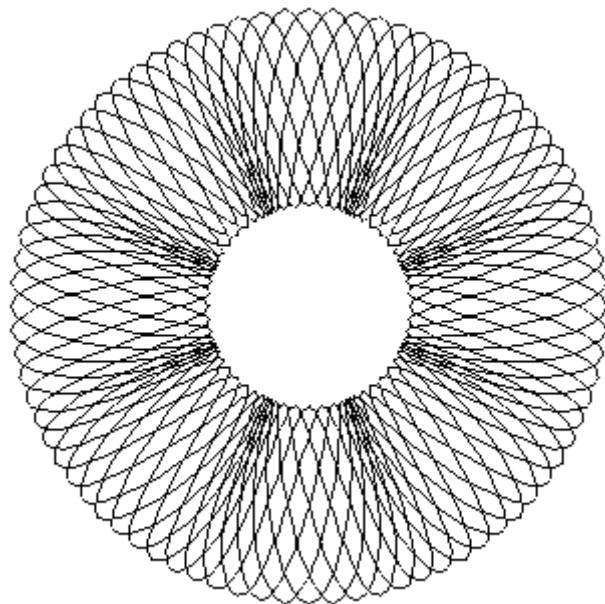


Figure 8-144

Amplitude: This parameter determines the magnitude of the density changes for the wave curve. The bigger the value is, the closer the spacing of the curves in a period will be. Valid value ranges from 0 to 100.

The figure below shows the effect when the period is set to 5 and the amplitude is set to 45:

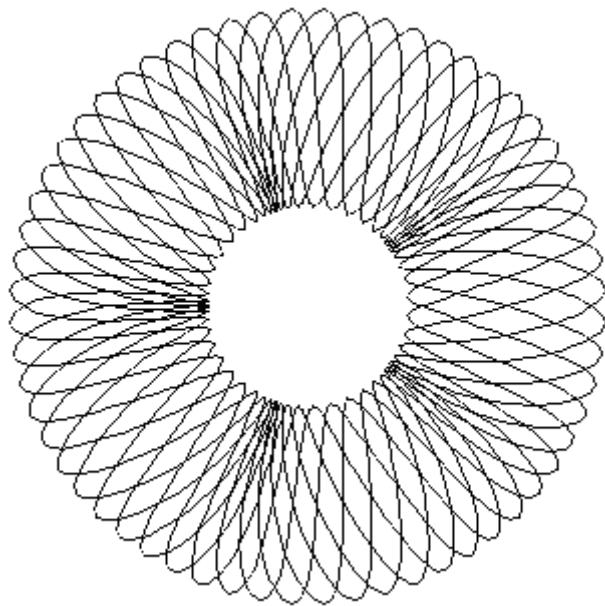


Figure 8-145

And when the period is set to 5 and the amplitude is set to 75:

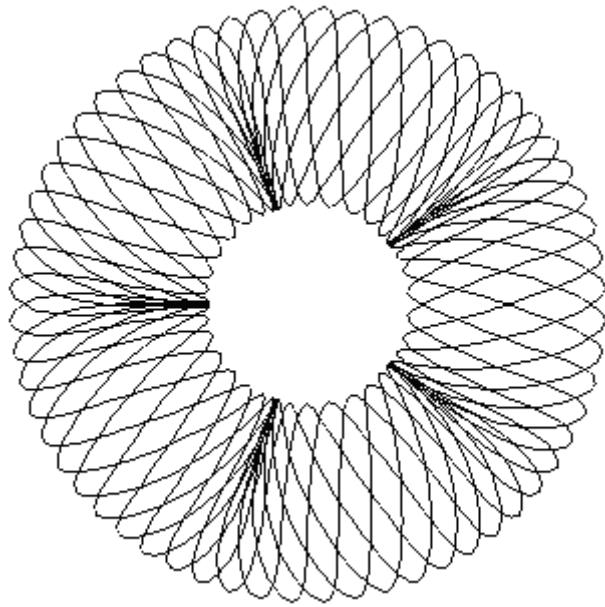


Figure 8-146

Phase: This parameter controls the direction and the degree for the rotation of the whole pattern. You can set it to a value ranging from 0 to 100. 100 means a rotation in a circle.

Effect as the period is set to 5, amplitude is set to 45, and the phase is set to 0:

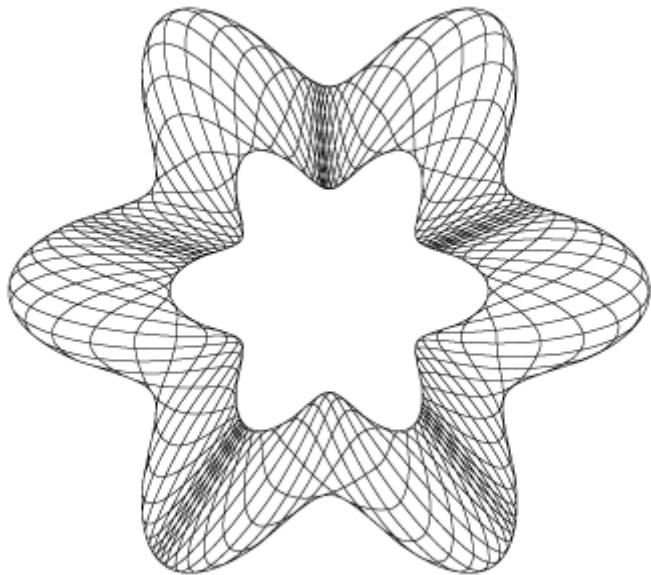


Figure 8-147

Effect as the period is set to 5, amplitude is set to 45, and the phase is set to 50:

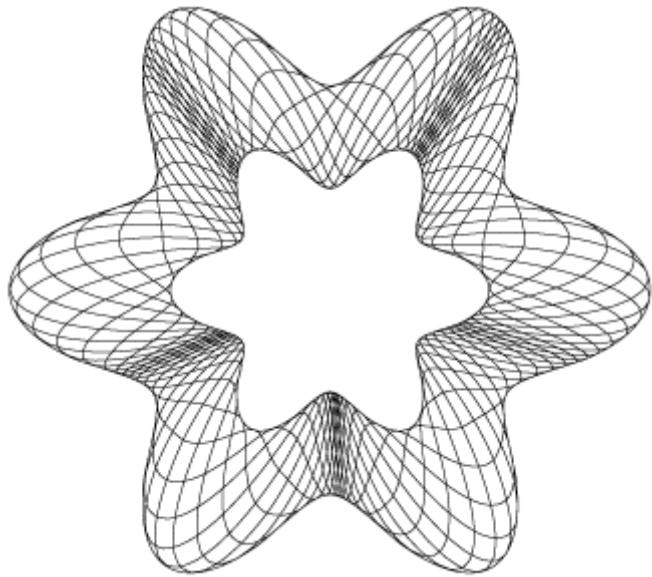


Figure 8-148

- **Red Envelope Setting**

“Red Envelope” refers to the red circular track in the **Wave Generator** dialog box as shown above. Parameters in this area control the period, amplitude and phase of the pattern on the red track. For details on the parameter settings, refer to related descriptions in the Blue Envelope Setting section.

- **Exchange Envelope**

This button enables you to exchange the parameter settings of the two envelope paths each other. When this button is clicked, the blue and the red elements in

the preview exchange.

8.10 Texture

Founder SuperLine 4.60 provides the texture design function. By only designing a basic drawing element, and defining related parameters as needed in the texture parameter setting interface, you can actualize diverse texture effects.

8.10.1 Generate a texture

To create a texture, perform the steps below:

- (1) From the main menu, select Effect → Texture to open the Texture dialog box as shown in the following figure:

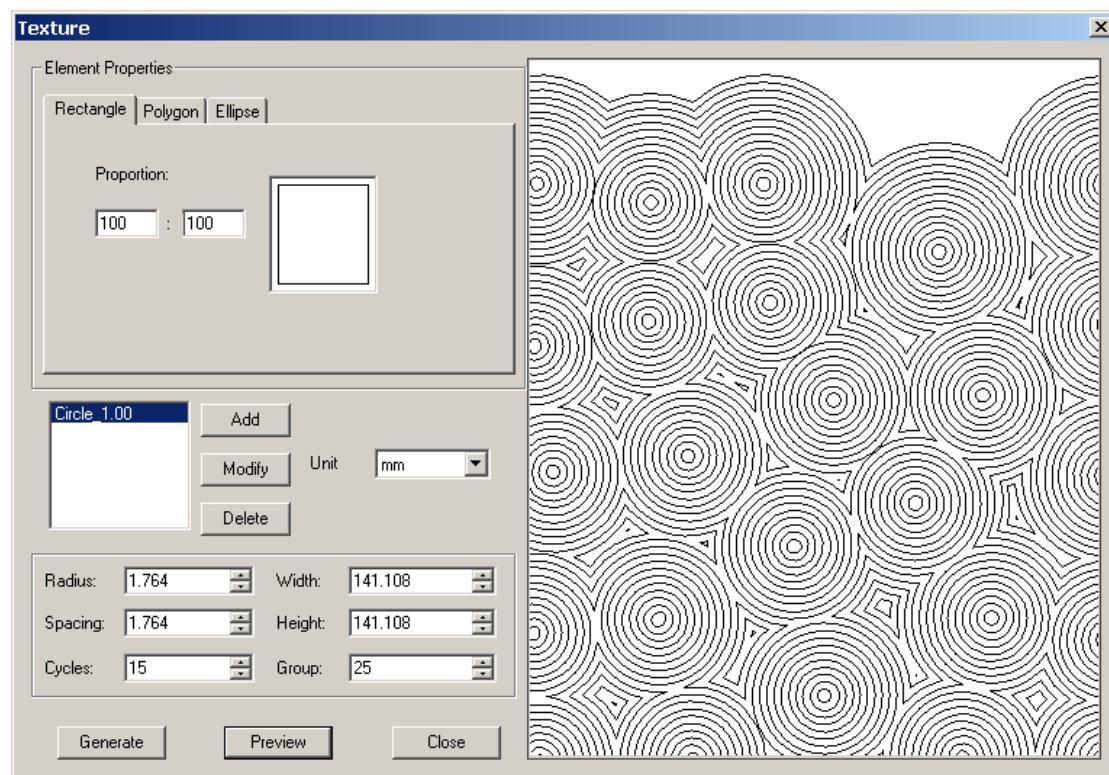


Figure 8-149

- (2) In the dialog box as shown above, you can define the properties of the basic elements. Basic elements can be a rectangle, a polygon or an ellipse. And settings for these basic elements can be combined together.

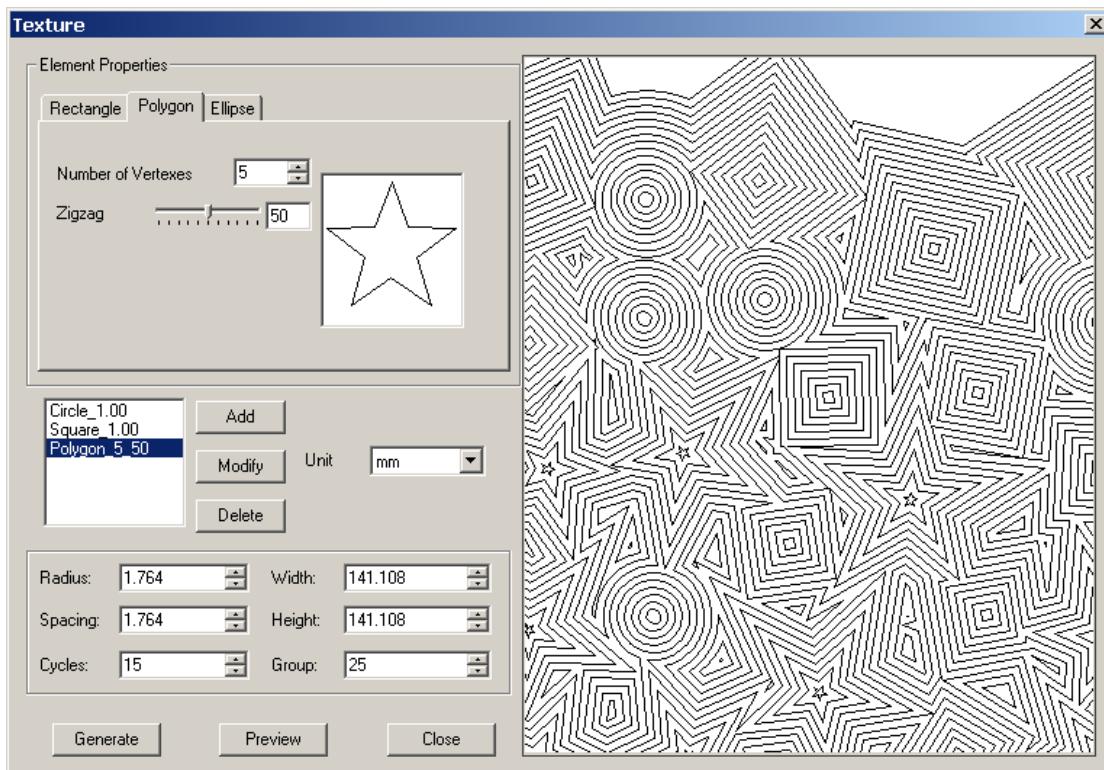


Figure 8-150

(3) You can change the distribution and the density of the basic elements by adjusting the values of corresponding parameters, so as to form various textures.

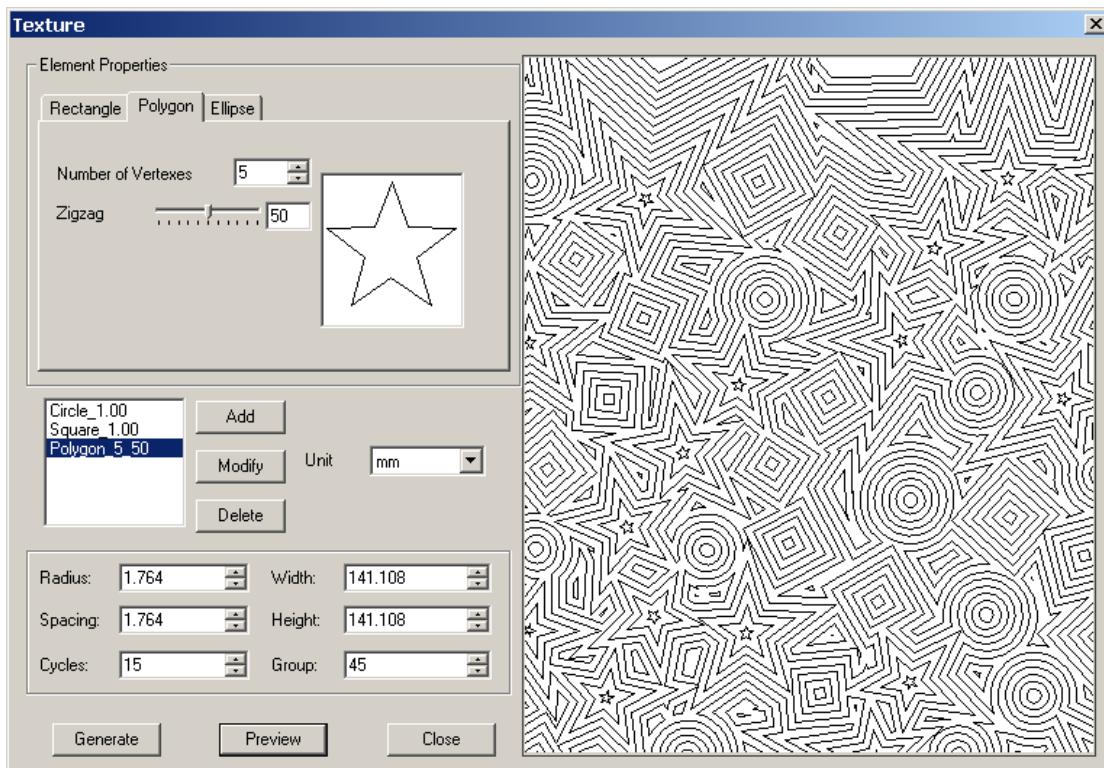


Figure 8-151

(4) You can click the **Preview** button, or click anywhere in the preview area, to preview the effect while you are setting the parameters. Click **Generate** when you complete the setting, and the newly created texture will automatically appear on the page.

8.10.2 Property settings

You can define the element properties by performing two steps: 1) define the basic shape of the element, and 2) adjust the style of the texture.

1) Define the basic shape of the element

The basic shape of the element can be defined in the **Element Properties** area of the **Texture** dialog box. Three basic shapes are available:

- **Rectangle**

The two **Proportion** edit boxes allow you to specify the width and height percentages of the rectangle. For example, a value of 100 and 100 determines a square.

- **Polygon**

Number of Vertexes: refers to the number of the vertexes that the polygon contains. Valid value is 3~20.

Zigzag: this parameter controls the extent in which the sides are concave or convex. The lower the value, the smaller the degrees at the vertexes will be. The default value is 50.

- **Ellipse**

Proportion: The two boxes specify the length percentages of the long and the short axes of the ellipse. For example, a value of 100 and 100 determines a circle.

Now you can perform add, modify and delete operations to the elements.

➤ Add an element

Click the **Add** button when you complete the **Element Properties** setting, an item of message like "Square_0.50" will be added to the list box on the right of the **Add** button, showing basic information about the type and property of the element. For example, "Square_0.50" means that the element is a rectangle, and the ratio of the width to the height is 0.50.

Note: You can add to the list box more than one element. And meanwhile, you can click **Preview** to preview the effect of the combination of multiple elements.

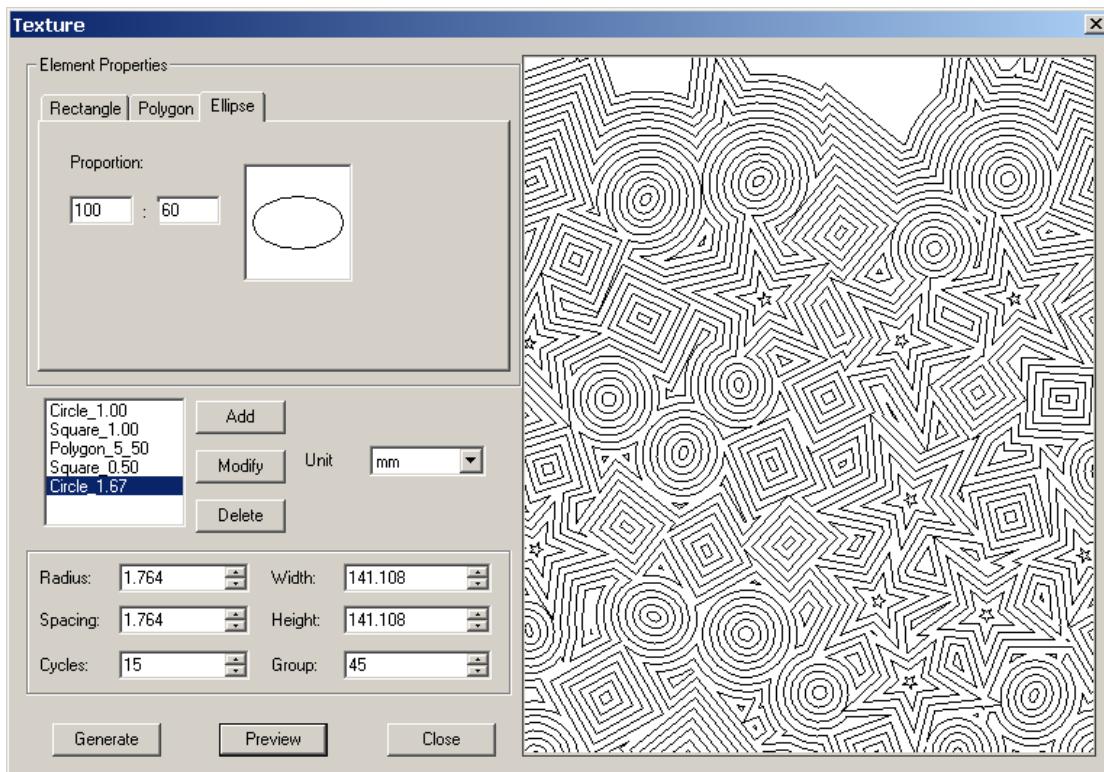


Figure 8-152

➤ **Modify an element**

Select an element in the list box, and make changes to its setting in the **Element Properties** area. After that, click the **Modify** button, the setting changes.

➤ **Delete an element**

Select an element and click **Delete** to delete the unneeded element.

2) Adjust the style of the texture

Parameters in the Texture dialog box, such as Radius, Width, Spacing, Height, Cycles and Group, enable you to gain various texture styles.

In order to introduce these parameters more easily, as an example here, we set the **Cycles** to 5 and **Group** to 8 at first.

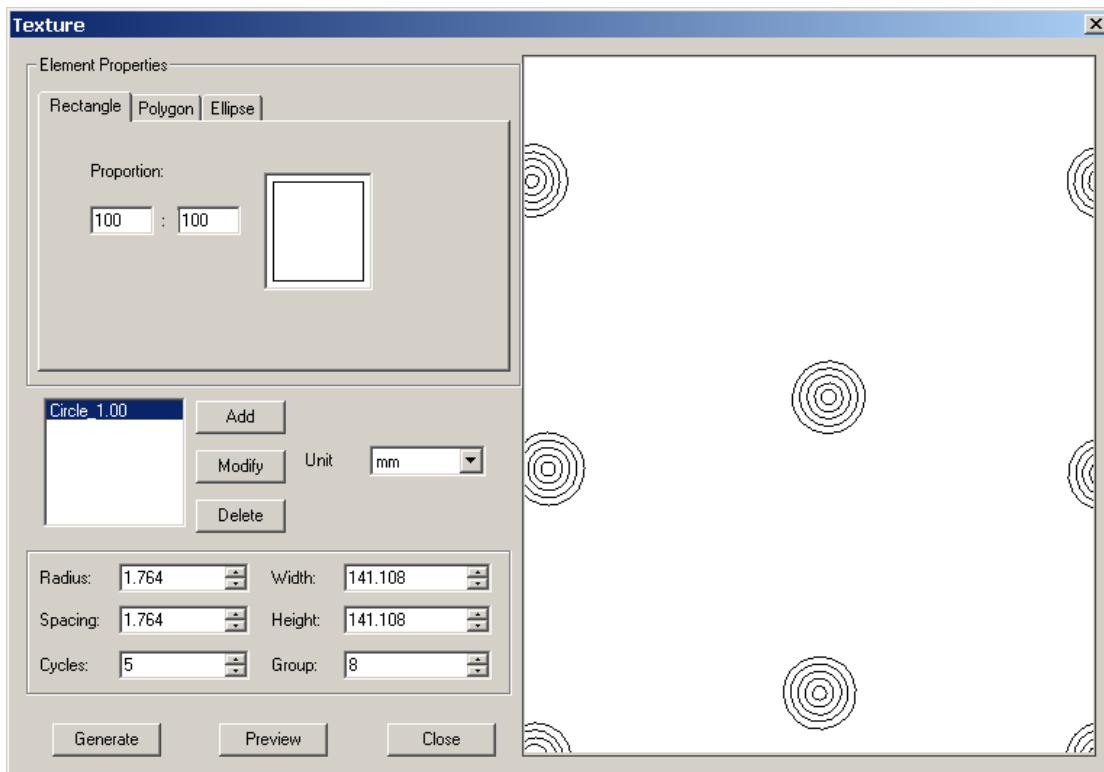


Figure 8-153

● Radius

This parameter specifies the radius of each basic element. Valid value is 0.01~100mm.

● Spacing

When more than one cycles are applied, this parameter controls the spacing between the adjacent cycles. For example, when it is set to 5 mm:

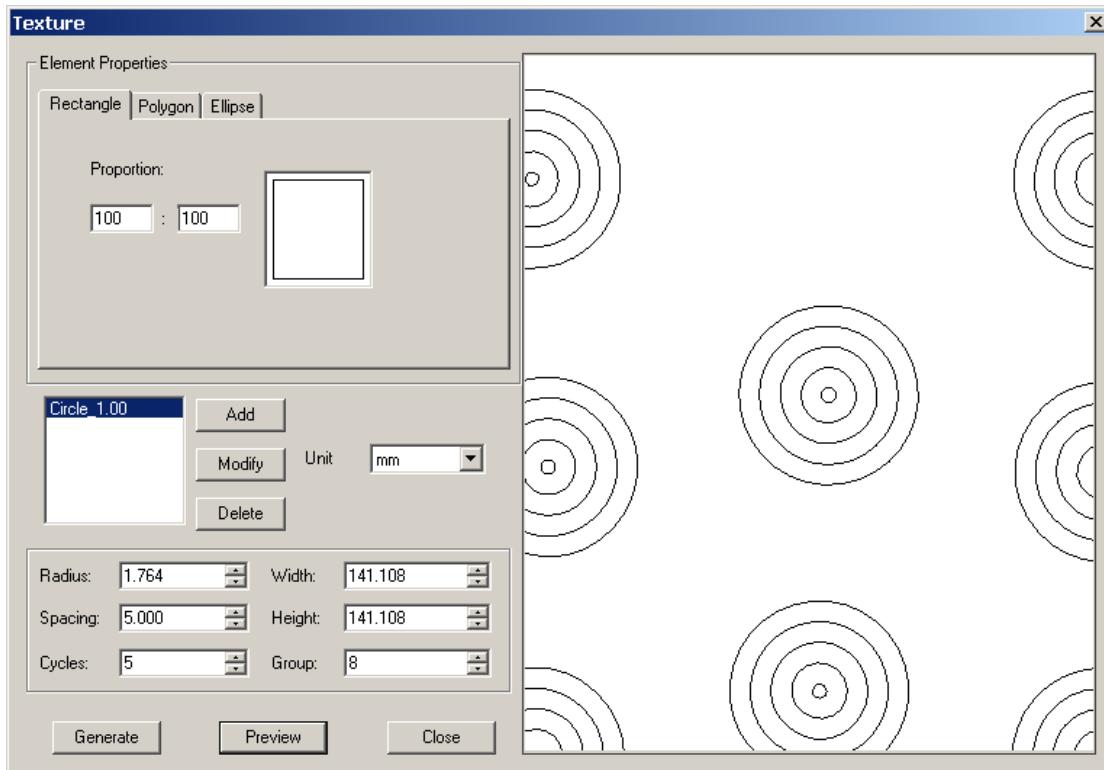


Figure 8-154

And when it is set to 8 mm:

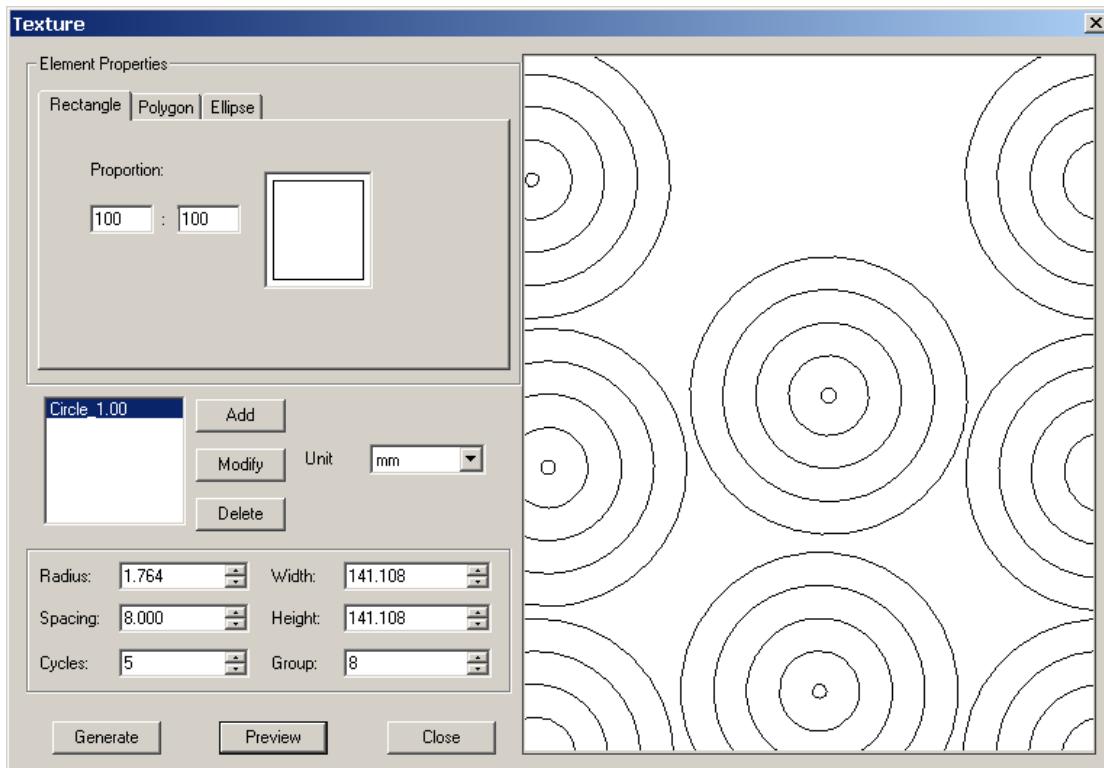


Figure 8-155

Note: The **Spacing** parameter doesn't take effect when the **Cycles** is set to 1.

- **Cycles**

This parameter specifies the times the element is copied. 1 represents a single element. When the value is bigger than 1, the elements combine. The bigger the value is, the more complex the generated graphics will be.

- **Group**

This parameter controls the groups of the element or element combination. The bigger the value is, the elements will stay denser each other.

- **Width and Height**

Refer to the width and height of the page for the texture.

- **Unit**

Here refers to the unit for the values of Radius, Spacing, Width and Height. Options include pt and mm.

Chapter 9 Advanced Anti-counterfeit Operations of Images

Image processing is a critical weapon in the anti-counterfeit design, for that it is hard to be forged and has the most anti-counterfeit characteristics. Moreover, image has high artistic value. All of these make it the absolutely necessary method for the anti-counterfeit design.

SuperLine provides various image-processing ways, by which image can be converted to all kinds of graphics, and thus bring a great many special effects.

- **Relief on Image:** Use the up and down fluctuating of the curve to enable the image a concave-convex appearance. For example:

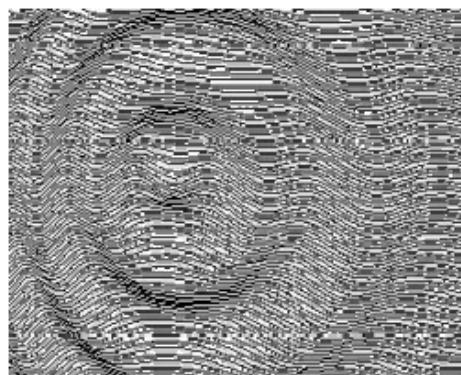


Figure 9-1

- **3D Relief:** enable relief effect on texture that is formed with text.

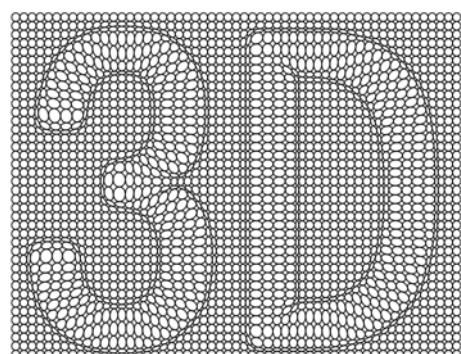


Figure 9-2

- **Engraving on Image:** Use the thickness change of the curve to represent the color shade.

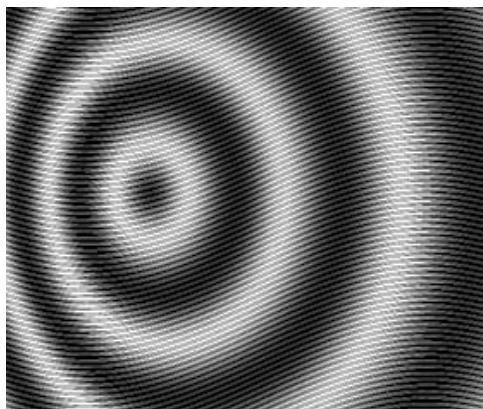


Figure 9-3

- **Raster:** Use the repeated array of graphic objects in different sizes to represent the arrangement of images.

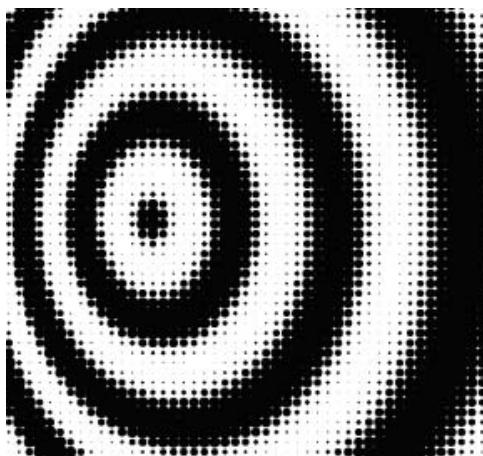


Figure 9-4

- **Multiple Raster:** the user can use a regular graphic object, or any number of irregular graphic objects, to generate a texture by way of auto array or Multicopy functions.

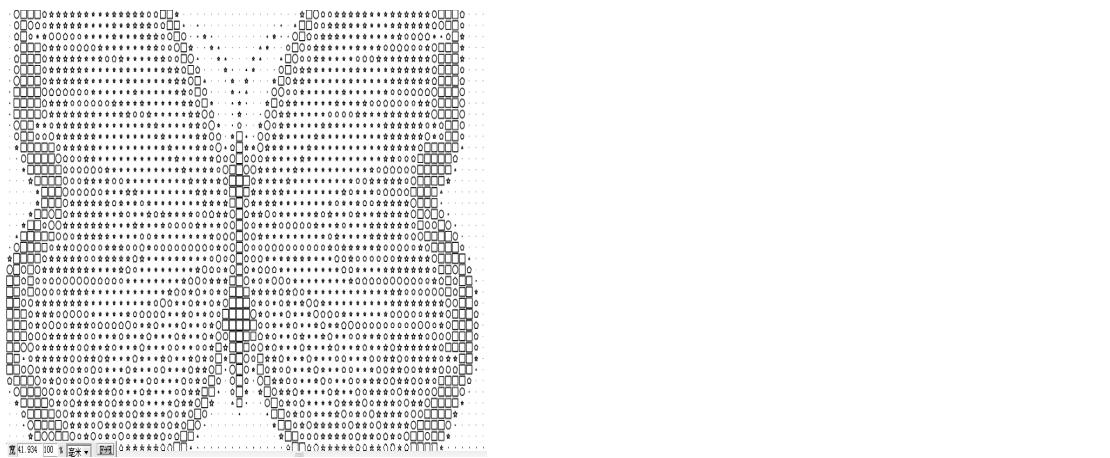


Figure 9-5

- **Image Contour:** Create an image contour.



Figure 9-6

9.1 Relief on Image

Relief on Image is the most common used element in the underlying design. Founder SuperLine not only provides the convenient **Relief on Image** tool, but also creates different styles of relief on image by special processing of the image. Compared with Relief on Graphic, the effects created by Relief on Image are more flexible and changeful. Combining with other results of image processing software, we can create relief effect with high artistic level.

The procedure for making relief on image is as follows.

(1) Prepare image

It is usually done in other image processing software such as Adobe PhotoShop and Founder Artworld. We need to do appropriate Gaussian Blur for too precipitous images.

Save the created image in the right format (like TIFF, etc.). In the Founder SuperLine page, select **File > Import** in the menu to import the image to the page.

(2) Create curve group

Create curve group in the page. The spacing between lines in the group should be appropriate (for example, the spacing is 0.2mm). If the spacing is too big, the relief effect is too rough. It is too small, it requires high back end printing techniques.

There are a lot of detailed methods for creating curve group, such as **Copy**, **Blend**, **Contour**, and etc.

(3) Create relief

Overlap the curve group and the image in the page, and select these two objects. Select the **Relief on Image** command under the **Image** menu to open the **Relief on Image** dialog box. And set the relief parameters in this opened dialog box.

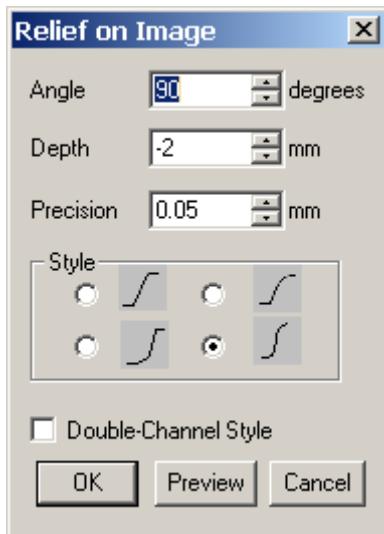
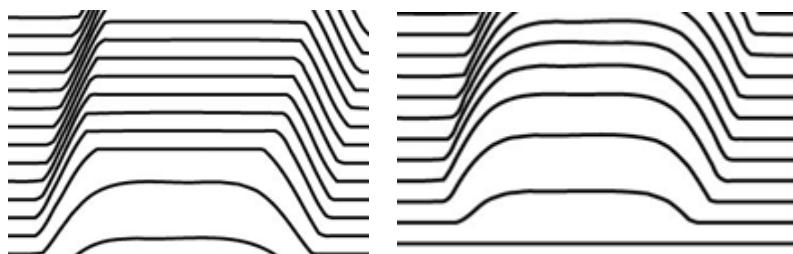


Figure 9-7

- **Angle:** It controls the degree and direction of the line fluctuation where the relief is generated.
- **Depth:** It controls the degree of relief fluctuation. When the value is positive, the lines in the bright part of the image are convex, and those in the dark part are concave. When the value is negative, it is reverse. The bigger the absolute value of the parameter, the bigger the fluctuation will be. This value can be bigger than the line spacing, but a too big value may cause multiple curves to get crossed and thus bring negative affect on effect. Therefore, experience may be required when you are defining this parameter. You can experiment with different values to compare their effects. The general experience says that, the more blur the image has, the bigger the depth should be; and the smaller the curve spacing, the smaller it is.
- **Precision:** It refers to the precision of the relief, i.e. the similarity with the image. The smaller the value, the created relief will be more similar with the image, however, this takes longer time. Usually, it is appropriate to set it to 0.05mm.
- **Style:** The four buttons in the **Style** area control the style of the relief. The different effects enabled by them are shown in the following figures:



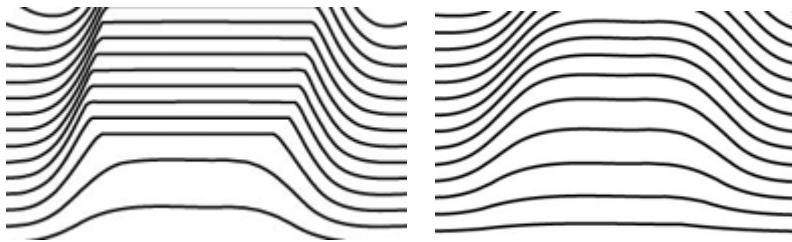


Figure 9-8

- **Double-Channel Style:** When this option is NOT checked, the operation is in the normal mode, in which the brightness of the image controls the vertical offset value of the relief lines. When it is checked, the operation is in the double-channel way, in which the red and the green channels of the image will be used to control the horizontal and vertical offsets of the relief lines respectively.

Click **OK** when you complete the setup of the parameters, and the relief is created, which is at the same position of the original image. Move the image and the original curve group away, and the created relief appears.

Notes:

- ① You can change the color of the relief through the **Stroke** color parameter of the **Fill and Stroke** dialog box.
- ② The part outside of the image is taken as 100% white, this is because that most of the users are accustomed to drawing black images on white background.

9.2 3D Relief

3D Relief refers to relief on the texture that is composed of text. Currently relief can only be created on lines, therefore, the user must convert the texture to curve at first. 3D relief can provide symmetrical varying density effects in all the four directions.

To create 3D relief, perform as follows:

- (1) Re-form the texture by converting text to curve;
- (2) Import an image to the page, overlap it with the texture, and make them both selected;
- (3) Select the **3D Relief** command under the **Image** menu to open the **3D Relief** dialog box;

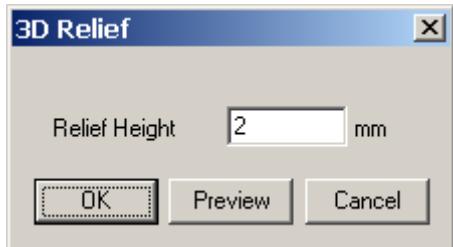


Figure 9-9

(4) Set the **Relief Height** value. You can click the **Preview** button to view the effect and adjust the value based on the preview effect.

Click **OK**, and the 3D relief will be generated.

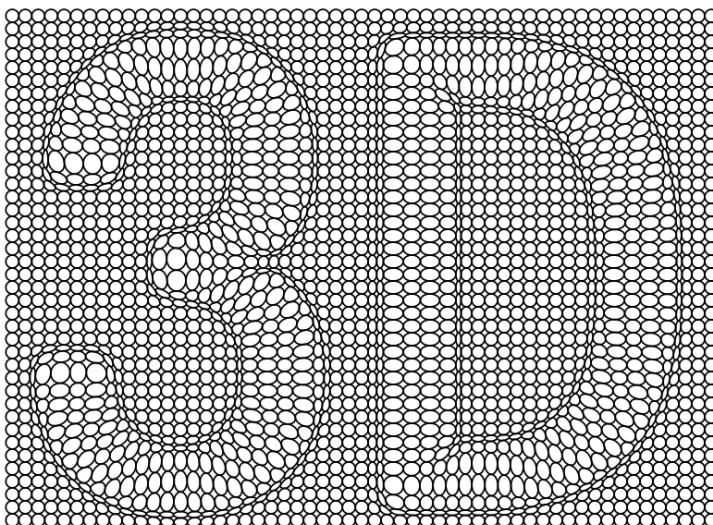


Figure 9-10

9.3 Engraving on Image

Use curves in various thickness to represent the shade of color. You can perform the following steps to create engraving effect on image.

(1) Prepare image

It is usually done in other image processing software such as Adobe PhotoShop and Founder Artworld. We need to do appropriate Gaussian Blur for too precipitous images.

Save the created image in the right format (like TIFF, etc.). In the Founder SuperLine page, select **File > Import** in the menu to import the image to the SuperLine page.

(2) Create curve group

Create curve group in the page. The spacing between lines in the group should

be appropriate (for example, the spacing is 0.2mm). If the spacing is too big, the relief effect is too rough. It is too small, it requires high back end printing techniques.

There are a lot of detailed methods for creating curve group, such as **Copy**, **Blend**, **Contour**, and etc.

(3) Create Engraving

Overlap the curve group and the image in the page, and select these two objects. Select the **Engraving on Image** command under the **Image** menu to open the **Engraving on Image** dialog box. And set the engraving parameters in this opened dialog box.

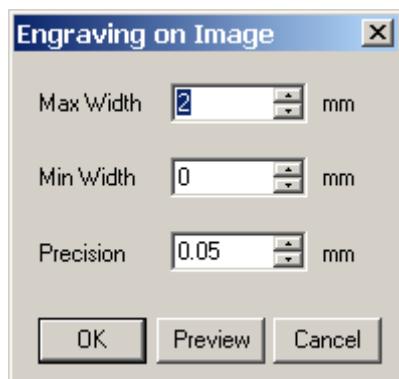


Figure 9-11

- **Max Width:** It is the line width of 100% black.
- **Min Width:** It is the line width of 0% black.
- **Precision:** It is used to control the precision of the created gradient line. The smaller the parameter, the smoother the created curve will be, however, this takes longer time. Usually, it is appropriate to set it to 0.05mm.

Click **OK** when you complete the setup of the parameters, and the engraving is created, which is at the same position of the original image. Move the image and the original curve group away, and the created engraving appears.

If you want to change the color of the engraving, you can select **Edit > Fill Color** in the menu to open the **Color** dialog box, and set within the box the color parameters for the whole engraving, such as color mode and value.

9.4 Rasterize

Rasterize represents the arrangement of the object by changing the width and (or) size of the object. The object is bigger and the line width is wider at the dark area of the image; it is reverse at the bright area. The steps for creating raster

effect are as follows.

(1) Prepare image

It is usually done in other image processing software such as Adobe PhotoShop and Founder Artworld.

Save the created image in the right format (like TIFF, etc.). In the Founder SuperLine page, select **File > Import** in the menu to import the image to the page.

(2) Create curve group

Create curve group in the Founder SuperLine page. The size of the objects in the group should be appropriate. If the size is too big, the raster effect will be too different from the real image. If it is too small, it takes too long a time to process.

There are a lot of detailed methods for creating curve group, such as **Unit Copy**, method you use depends on the real situation.

(3) Create raster effect

Overlap the curve group and the image in the page, and select these two objects. Select the **Rasterize** command under the **Image** menu to open the **Rasterize** dialog box. And set the raster parameters in this opened dialog box.

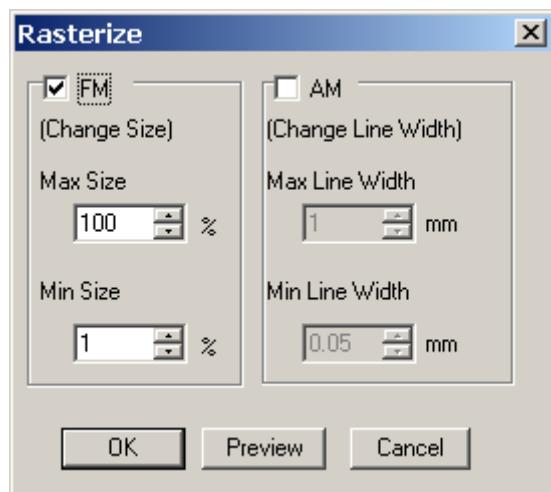


Figure 9-12

- **FM:** Check this option to change the size of the object. **Max Size** is the size of the object where the figure brightness is pure black. **Min Size** is the size of the object where the figure brightness is pure white. Both range from 0 to 100.
- **AM:** Check this option to change the line width of the object. **Max Line Width** is the line width of the object where the figure brightness is pure black. **Min Line Width** is the line width of the object where the figure

brightness is pure white.

Click **OK** when you complete the setup of the parameters, and the raster is created at the right side of the original image.

Note: You can change the color of the raster through the **Stroke** color parameter of the **Fill and Stroke** dialog box.

9.5 Multiple Rasterize

Multiple Rasterize is an enhancement to the **Rasterize** function. With this enhancement, you can use one regular or any number of irregular graphic objects to form a texture by way of auto array or Multicopy functions, and then use this texture to characterize image.

To apply Multiple Rasterize, perform as follows:

(1) Select together an image object, a background object and a screening object.

- The background object can be null, or a group object, or a single object, or a clip object (but must be a graphic object, NOT an image object). Make an image object and two graphic objects selected together, the first graphic object is background object, and the second is screening object.
- The screening object can be a group object, or a single object, or a clip object (but must be a graphic object, NOT an image object).

(2) Select the **Multiple Rasterize** command under the **Image** menu to open the **Multiple Rasterize** dialog box.

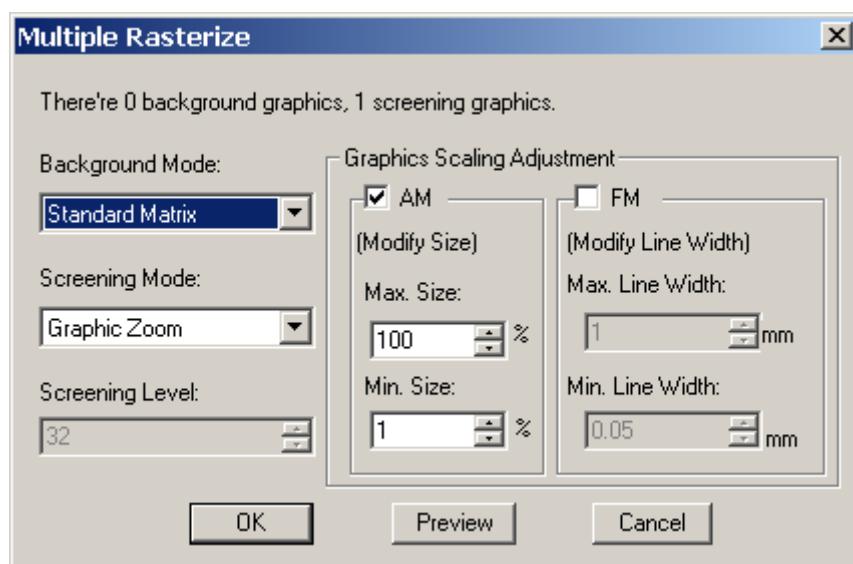


Figure 9-13

- **Background Mode:** Options include **Standard Matrix**, **Odd Line Shift Matrix** and **Even Line Shift Matrix**.
- **Screening Mode:** **Graphic Blend** or **Graphic Zoom**. When the **Graphic Blend** is selected, the **Screening Level** option in the below is activated, with which you can set a screening level (range 1-256). And when **Graphic Zoom** is selected, the **Graphics Scaling Adjustment** parameters are activated. You can decide to enable or disable the AM and/or FM zoom mode, and define corresponding size and line width values.

Click **OK** when you complete the setup of the parameters, and the screened graphic is created, which is on the right of the image object.

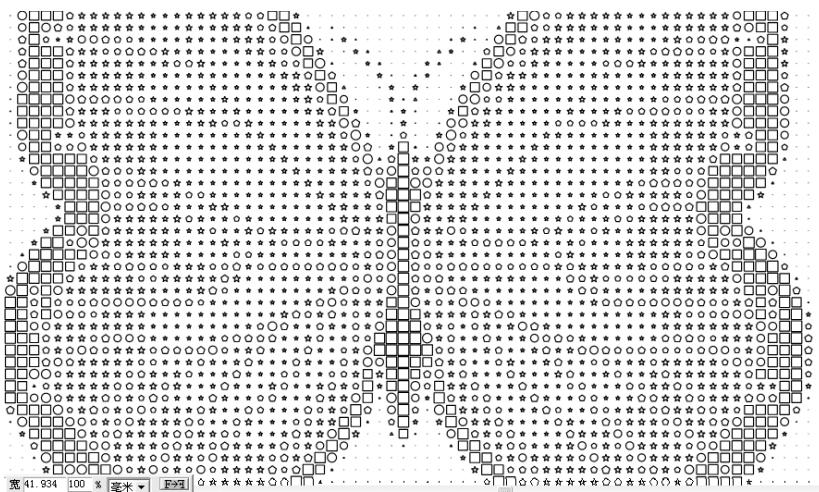


Figure 9-14

9.6 Image Refraction

Refraction function is to divide an image into different areas according to its brightness. Fill in each area using straight lines with different directions. This function is used for special refraction printing.

The procedure is as follows.

(1) Prepare image

It is usually done in other image processing software such as Adobe PhotoShop and Founder Artworld.

Save the created image in the right format (like TIFF, etc.). In the Founder SuperLine page, select **File > Import** in the menu to import the image to the page.

(2) Create refraction effect

Select the image in the page, and then select **Tool > Image Refraction** in the menu to open the **Image Refraction** dialog box. And set related parameters.

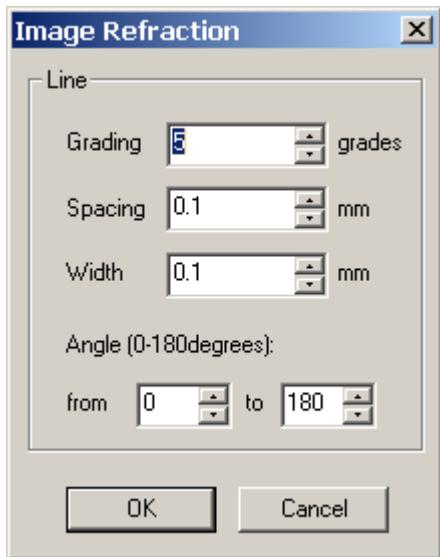


Figure 9-15

Grading: It controls to divide the image into how many layers and fill in parallel lines in the area of each layer.

Spacing: The space between the filled lines in the same area.

Width: The line width of the filled lines in the one area.

Angle: It shows the distribution of the segment array directions in different areas. For example, it divides to four levels, and when the angle distribution ranges from 30° to 150°, the segment array directions in each area are 30°, 60°, 90°, 120° and 150° respectively. It ranges from 0° to 180°.

After the parameters are set, click **OK** and the refraction effect is made.

Note: The user can change the refraction image size by using mouse or modifying the values in the width and height edit boxes in the **Object Panel**. The user may also change the color and line width of the refraction image object by modifying the **Stroke** in the **Fill and Stroke** dialog box.

9.6.1 Mono Layer Image Refraction

We can do monolayer image refraction for an image object, which is to process only one level of refraction. This function can do local modification and adjustment for the created image refraction. The procedure is as follows.

- (1) Select the image object.
- (2) Select the **Monolayer Image Refraction** command under the **Tool** menu to open the **Monolayer Image Refraction** dialog box. And set related parameters.

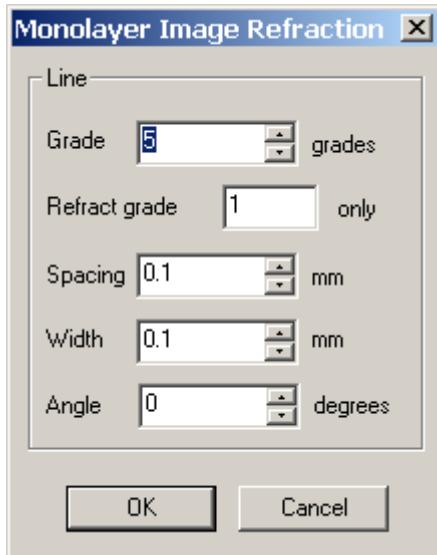


Figure 9-16

(3) Click **OK** to complete.

Note: The value range of the **Refract grade xxx only** parameter is from 1 to the number of grade (if the user set it bigger than the number of grading, it will create refraction according to the highest number of grading automatically).

9.6.2 Image Refraction Properties

For the created image refraction, the user can view the refraction properties of any grading to make sure which grade it is. The detailed procedure is as follows.

- (1) Select the created image refraction. Ungroup it by selecting **Object > Ungroup** in the menu.
- (2) Randomly select one grade of refraction, and select **Tool > Image Refraction Property**. View the total grading of refraction and the grading number of this grade of refraction in the popped up dialog box.

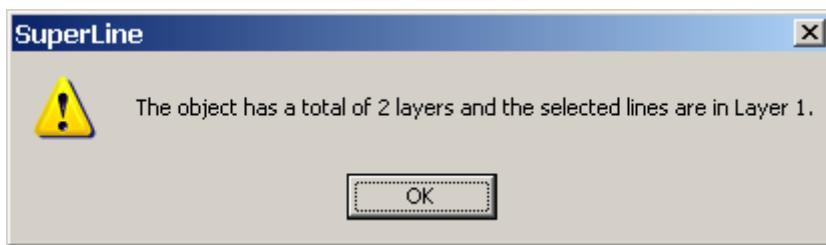


Figure 9-17

9.7 Image Contour

Image Outline is used for vectorization of the digital images, and usually for black and white images. The created vectorization outline can be used for cutting other image objects or other operations. The procedure is as follows.

Select **Image > Image Contour** in the menu, and the **Import** file dialog box pops up. Select the image for picking up the outline and click **OK** to get it.

Note: *Image Outline effect is designed for vectorization of the black and white scanning drafts. Generally speaking, please do NOT apply it to natural images.*

9.8 Reload Image

While working on image effect for an image, we usually need to try many times to modify parameters so as to get a satisfied result. With an aim to provide convenience in such a case, **Reload Image** enables you to reload the image easily. It saves the operations for searching the paths for importing images.

To reload image, select the image object to be inputted again, and run the **Reload Image** command under the **Image** menu.

9.9 Workflow for making lock-opening

Assume the image used is a CMYK four-color image named "Image.tif". The hidden lock-opening information image in the **Cyan** printing plate is a gray scale map "code_c.tif". The hidden lock-opening information image in the **Magenta** printing plate is a gray scale map "code_m.tif".

1. In Adobe PhotoShop

- (1) Copy the **Cyan** channel of the "Image.tif" and create an individual gray scale map "Image_c.tif";
- (2) Copy the **Magenta** channel of the "Image.tif" and create an individual gray scale map "Image_m.tif";
- (3) Fill in the **Cyan** and **Magenta** channels of the "Image.tif" with white color and save it as "Image_yk.tif".

2. In Founder SuperLine

- (1) Import "Image_c.tif" to the page;
- (2) Create a rectangle frame in the same size as "Image_c.tif";

(3) Apply **Fill Line** to the rectangle frame:

Obliquity: 15°; **Spacing:** 0.11 mm; **Width:** 0.05 mm.

(4) Align the line group made in procedure (3) with the image;

(5) Select the line group and the image together, and apply the **Engraving on Image** function:

Max Width: 0.16 mm; **Min Width:** 0.0 mm; **Precision:** 0.05 mm.

And delete the "Image_c.tif" and the original line group from the page.

(6) Import image "code_c.tif" to the page, and put it on top of the engraving created in procedure (5);

(7) Select the engraving and "code_c.tif" together, and apply **Relief to Image**:

Depth: 0.03 mm; **Precision:** 0.05 mm; check the fourth **Style** option; uncheck **Double-Channel Style** box.

And delete the image "code_c.tif" and the original engraving.

(8) Apply 100% Magenta fill to the line relief, and set the line width to 0;

(9) Export the page as "kaisuo_c.ai".

3. Use the same method to create Magenta lock-opening

Note: Procedures (1) to (8) are similar to those in the above section "In Founder SuperLine". Export the page as "kaisuo_m.ai" in procedure (9).

4. In Adobe Illustrator

(1) Open "kaisuo_c.ai" and "kaisuo_m.ai";

(2) Copy the lock-opening lines in "kaisuo_m.ai" to the page of "kaisuo_c.ai", and close "kaisuo_m.ai";

(3) Set the Cyan and Magenta printing plates lock-opening lines to Overprint.

(4) Import "Image_yk.tif";

(5) Align "Image_yk.tif" with the lock-opening lines. The image is overprinted on the lines;

(6) Save it as "kaisuo.eps".

5. Rip output

(1) Set Rip as "Allow Overprint" (some Rip requires to set "Allow User-defined Hollow Out Parameter", otherwise Overprint is invalid);

(2) The CMYK printing plates are all output using 200 lines;

Note: Because the lines in Cyan and Magenta printing plates are very dense and

less high output precision may result in lines to lose shape and have negative impact on the effect, 200 lines is a must.

(3) Grid Angle of Black printing plate is 45° and that of Yellow printing plate is 90°.

6. Check points when proofing result is NOT satisfied

(1) Lock-opening is overprinted or not.

(2) Rip allows overprint or not. Use super magnifier glass to view Yellow and Black printing plate films. If there are lots of incomplete lattice points, it seems no overprint.

(3) The making parameters are appropriate or not. Line Spacing and Height of Relief all have impact on the making effect. Please do more experiments with different parameters and find out the best parameter.

(4) The output accuracy is enough or not. If it is too low, it will cause losing shape. If there are no regular lines in the proof, it might result from the non-satisfied accuracy of Magenta and Cyan printing plates.

(5) Grid Angle is set appropriate or not. The main reason to set the grid angle for the Yellow and Black printing plates is to avoid their interference with Magenta and Red. If it is not set right, the interference will also appear. User can try different combinations of grid angles and compare them.

(6) Please use magnifier glass to watch the film more and find out the problem.

Chapter 10 Special Tools

This chapter will discuss the special tools provided in Founder SuperLine, that can create special graphics, expedite the design efficiency, improve the design quality and can be used in special technical process.

The first is refraction, widely used in refraction picture and anti-counterfeit package boxes. The refraction printings are made available by special printing process. The refraction pictures generated by Founder SuperLine may be used as the zigzag line of the refraction printings.

Founder SuperLine may also generate the bar codes useful to the anti-counterfeit design of the package boxes and book covers. The bar codes may be used with other elements while eliminating some intermediary links. The bar codes generated by Founder SuperLine are up to international standard and identifiable with the bar code scanner.

The refraction can generate random or iterative graphics.

10.1 Refraction

Founder SuperLine supports three types of graphics refraction, i.e. central radiation refraction, concentric circle refraction and parallel refraction. In addition, the graphics may also have the refraction effect, see Section 9.6.

10.1.1 Central-Radiative Refraction

The central radiation refraction can create the radiating effect from the center, as shown in the following figure.

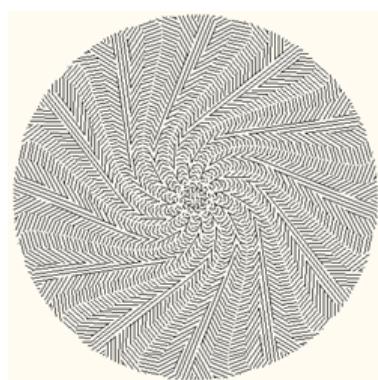


Figure 10-1

It can simulate the effect a group of lights rotating around a center. First, an

open curve serves as the backbone of the refraction, then the curve is rotated and reproduced with the starting point as the center, and the different-direction parallel lines fill the space in the curve. Users can determine the final refraction effect by controlling the groups of the parallel lines, the numbers of each group of parallel lines, direction of the parallel lines. The parallel lines herein may also be named as light or beam (a metaphor to the optical phenomenon) or the texture.

Follow the steps below to create the central radiation refraction:

(1) Select an unclosed path as the backbone line of the refraction, which determines the rotating mode of the refraction as shown in figure below.

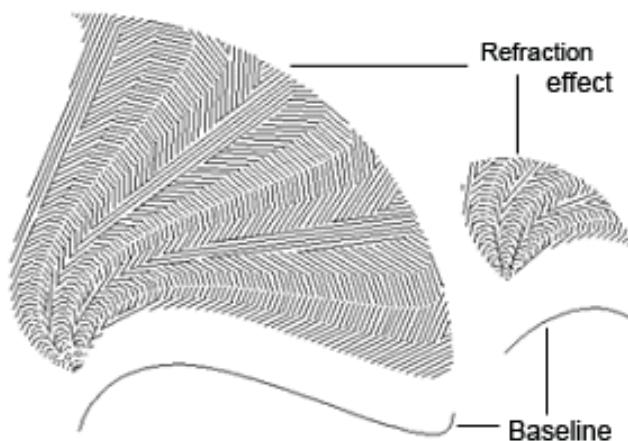


Figure 10-2

(2) Select **Tool > Centro-Radiative Refraction** to open the **Centro-Radiative Refraction** dialog box.

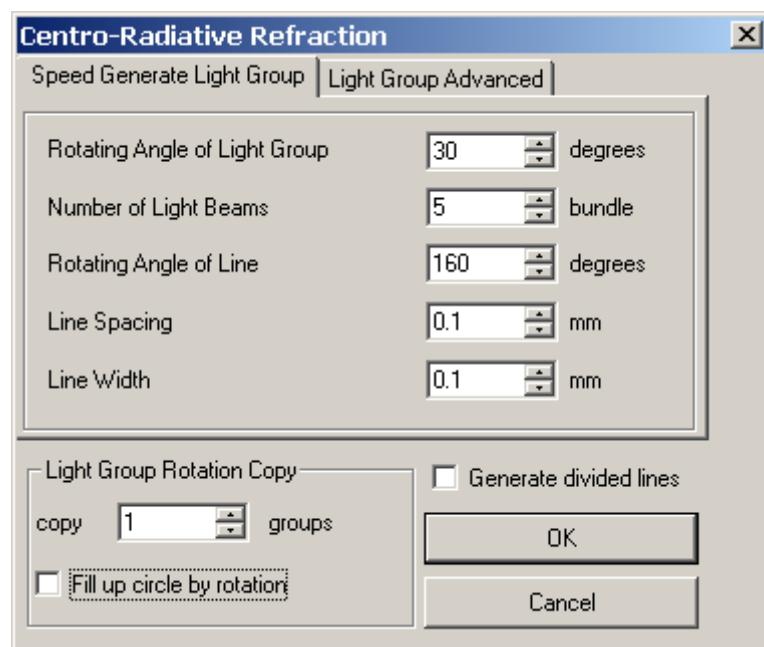


Figure 10-3

(3) Configure the refraction options in the dialog box.

The refraction options include the line groups, beam structure in each group and the generation of cutting line.

- Determine the groups in the **Light Group Rotation Copy** box;

Input the line group numbers in the **copy** box, the sum of which and the total rotating angle of the group should not exceed 360°; Selecting the **Fill up circle by rotation** check box, the system will automatically determine the line groups to ensure full-circle refraction.

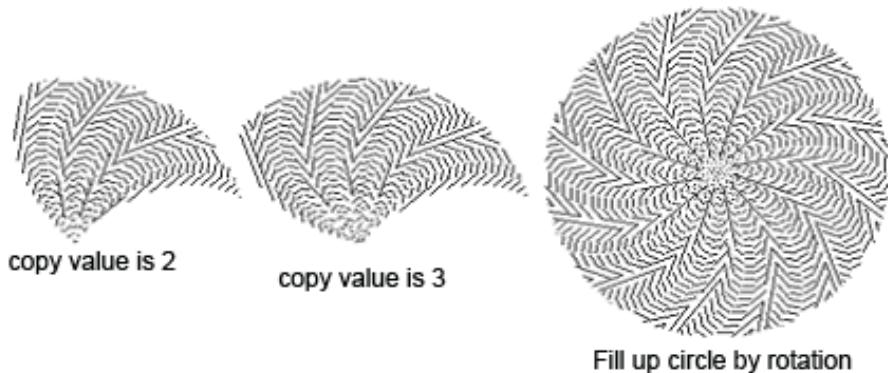


Figure 10-4

- Select the **Generate divided lines**, there will be divided lines between adjacent line groups.

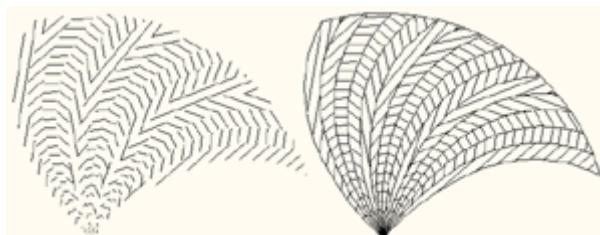


Figure 10-5

- It is most complex and critical to determine the line structure of each group with the following parameters:

Rotating Angle of Light Group: Refers to the rotating angle of each light group. The larger is the rotating angle, the greater the area that is covered by the light group. This rotating angle equals to the sum of the rotating angles of each beam in the group.



Figure 10-6

Number of Light Beams: Refers to how many different directions in each group of light beams. When filling in skeleton graphics, it refers to how many groups of light beams.

Rotating angle of Line: change of line direction.

Line Spacing: distance of adjacent lines in each beam (generally below 1mm).

Line Width: width of each beam.

- There are two methods for setting up the beam structures of each group:

➤ **Quickly configure the line group**

The width/interval of each beam in one group is the same with equal rotating angles of the beams and the direction gap between adjacent beams.

Click the **Speed Generate Line Group** tab in the dialog box to configure the beam features.

Rotating Angle of Light Group: set in the field from 0° to 360°, equivalent to the sum of the beam angles

Number of Light Beams: set in the field from 1 to 100.

Rotating angle of Line: direction change. In case of the 3 beams and texture rotating angle of 90°, it means that the line direction from the first beam changes 90°.

Line Spacing: as set in the field from 0.001 to 10.

Line Width: as set in the field from 0.001 to 10.

➤ **Customize the group configuration**

Users may configure the line width, line spacing, rotating angle and direction of each beam in one group independently. Switch to the **Light Group Advanced** tab to configure the beams.

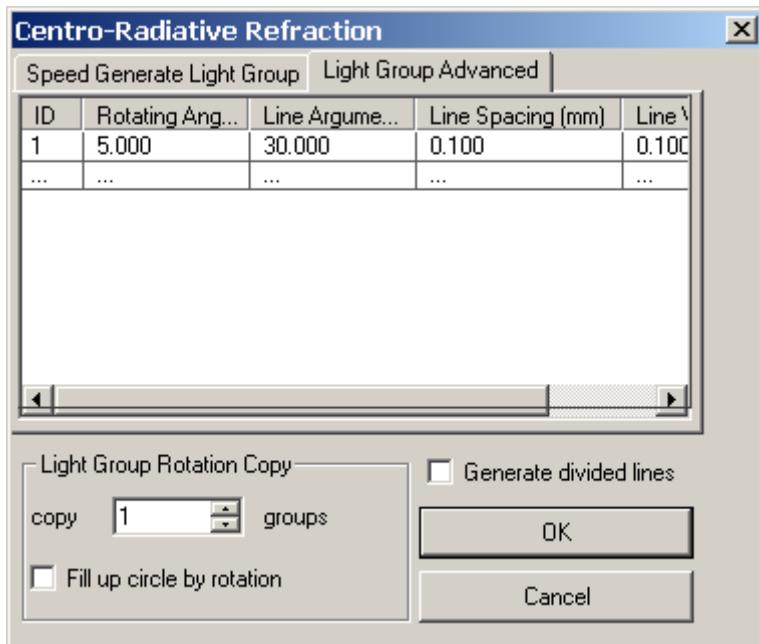


Figure 10-7

The list in the dialog box represents the features of the lines with each row representing one beam and each column representing one feature. The serial number represents the order of the beams, the beam angles constitute the group rotating angle with the texture phase gap representing line direction as the angle gap of adjacent beams. There are also texture interval and texture width.

To change certain parameters, double-click in the target position, and then input the data.

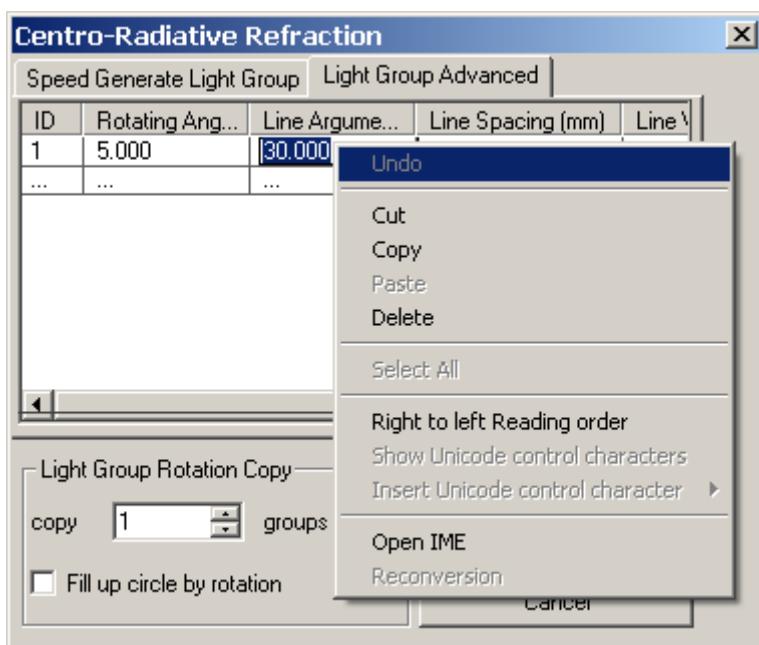
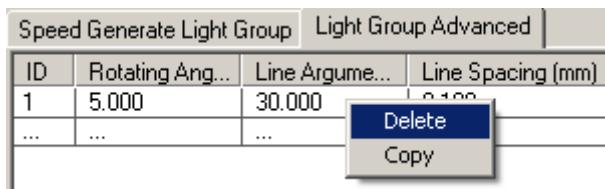


Figure 10-8

To input the data, right-click, pop out the shortcut menu. Select **Undo** to undo the last operation; select **Cut** to cut the selected data to the clipboard to paste to other data; select **Copy** to copy the selected data for paste; select **Paste** to paste the data on the clipboard to the target position; select **Delete** to delete the selected data; click **Select All** to select all current data.

In addition, right-click to pop up the shortcut menu, select **Copy** to copy the current row, select **Delete** to delete the current row.



Speed Generate Light Group				Light Group Advanced
ID	Rotating Ang...	Line Argume...	Line Spacing (mm)	
1	5.000	30.000	0.100	Delete
...		Copy

Figure 10-9

Drag the serial-number column to copy the target row.

(4) Click **OK** in the dialog box to generate the refraction effect.

The figure below shows the refraction effects from two beam structures.

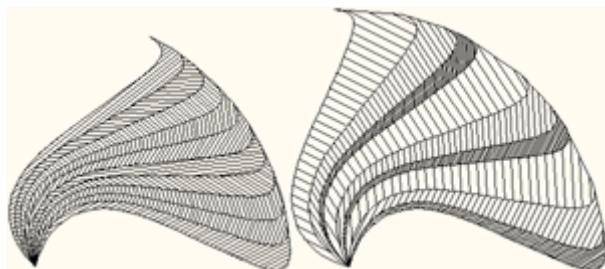


Figure 10-10

Notes:

- ① In central radiation refraction, users can only select one open path, i.e. one open graphic object instead of any text, group, object, picture and clip mask object.
- ② Users may change the object size of the central radiation refraction by the mouse or modification of the width and height value in the **Object Panel**, or change the color and line width of the central radiation refraction object by modifying the outline and outline properties; This also applies to the concentric circle refraction and parallel line refraction.

10.1.2 Concentric Circles Refraction

Concentric circle refraction can create the concentric circular refraction effect as shown by the figure below.

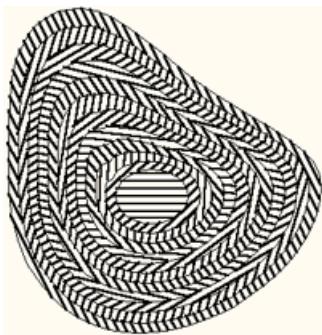


Figure 10-11

Similar to the central radiation refraction, the concentric circle refraction also fills in the graphic space by lines. The users can determine the beams in each group, beam direction and the final refraction effect. In contrast, the central radiation refraction will automatically generate the refraction backbone concurrently with the refraction operation, the concentric circle refraction requires the user to design the skeletal figure prior to refraction operation. Similarly, the lines refer to the parallel lines, or textures.

Follow the steps below for concentric circle refraction:

(1) Create skeletal graphics consisting of a series of closed figures that determine the line-filling position and the refraction shape. The sample skeletal figure can be created in such methods as curve combination and reproduction.

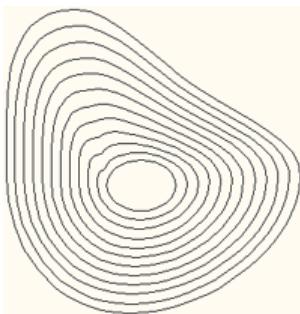


Figure 10-12

- (2) Select the skeletal figure.
- (3) Select **Tool > Concentric Circles Refraction** to open the **Concentric Circles Refraction** dialog box.

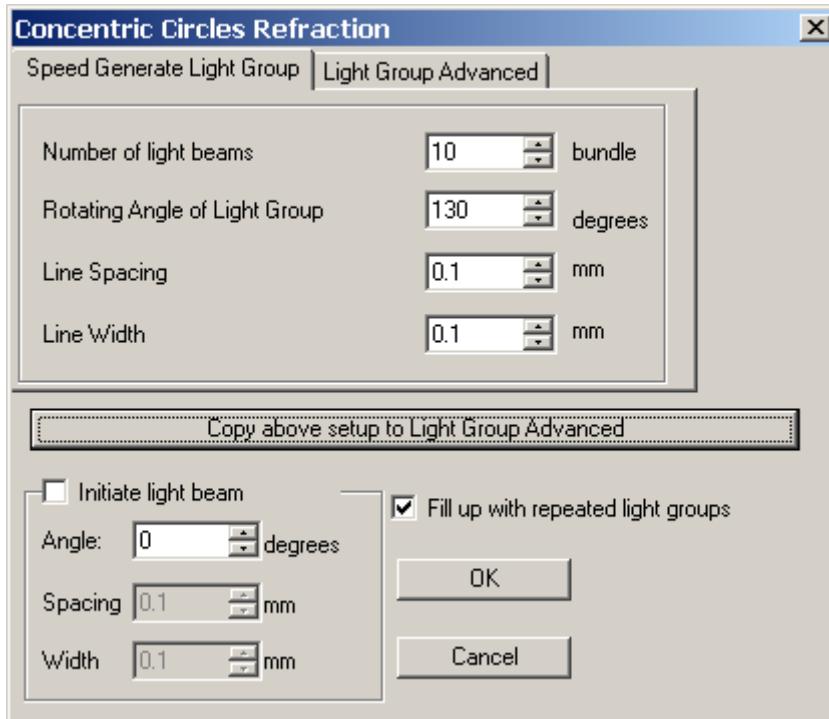


Figure 10-13

(4) Configure the refraction option in the dialog box.

The refraction options consist of the starting beam, beam structure in each group and the filling of all skeletal figures.

- Select the **Initiate light beam** check box to create the starting beam, i.e. filling the backbone path in the center. Users may select the line direction, line interval and width in the **Angle**, **Spacing** and **Width** boxes. In case of no selection of the **Initiate light beam** check box, the backbone path in the center will not be filled. However, the user may set the starting angle in the Angle box, based on which other beams will change directions.



Figure 10-14

- Select the **Fill up with repeated light groups** check box, the line group will repeatedly fill in the skeletal figure until it is full. Otherwise, only one designated beam is filled.
- Like the central radiation refraction, the concentric circle refraction also fills the graphics with a group of beams, and allows the configuration of the beam structure of each group in the following parameters:

- **Number of light beams**: different directions in each group.
- **Rotating Angle of Light Group**: beam direction change.
- **Line Spacing**: distance of adjacent lines in each beam (generally below 1mm).
- **Line Width**: width of each beam.
- Configure the beam structures of each group in the following ways:
 - **Quick configuration of the group**

The line width/interval of each beam is equal with the equivalent beam direction gap.

Click the **Speed Generate Light Group** option in the dialog box to configure the beam features.

Number of light beams; as set out in the field from 2 to 100 (with user number assumed as 1, the system will automatically generate the refraction with 2 beams).

Rotating Angle of Light Group: beam direction change. In case of the starting angle of 0°, 3 beams and 90° texture rotating angle, the system will generate the starting beam angle of 0°, the first beam angle of 30°, the second beam angle of 60°, and then 120° and 150° to 180° with the angle gap of 30° for subsequent beams.

Line Spacing: as set out in the field from 0.001 to 10.

Line Width: as set out in the field from 0.001 to 10.

➤ **Customize the group configuration**

Users may configure the line width, line interval, rotating angle and direction of each beam in one group independently.

Click the **Light Group Advanced** option in the dialog box, configure the beams.

The list in the dialog box represents the features of the lines with each row representing one beam and each column representing one feature. The serial number represents the order of the beams, the beam angles constitute the group rotating angle with the texture phase gap representing line direction as the angle gap of adjacent beams. There are also texture interval and texture width.

To modify and edit the beam data in the list, please refer to the content of Central Radiation Refraction.

- Select the **Copy above setup to Light Group Advanced** button, the data on the **Speed Generate Light Groups** pane will be copied to the list of

Light Group Advanced pane.

(7) Click **OK** in the dialog box to generate the refraction effect.

The figure shows the refraction effect of quick group configuration and customized group configuration.

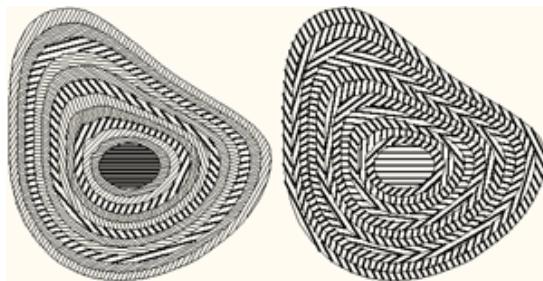


Figure 10-15

Note: In concentric circle refraction, the skeletal figure may be a graphic object, or a group object or multiple graphic objects. However, it always consists of multiple closed paths.

10.1.3 Parallel Lines Refraction

The parallel line refraction is similar to concentric circle refraction, but the skeletal figure consists of multiple open curves with the beams to fill the curve space as shown in the figure below.

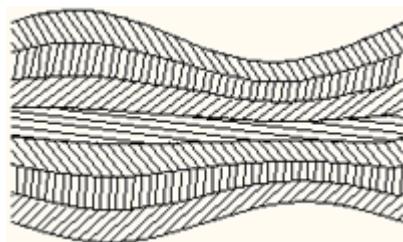


Figure 10-16

With the parallel line refraction, one group of beams will fill in the space between the open paths. Users can determine the final refraction effect by controlling the beams of each group and the beam directions. The lines herein also refer to the parallel lines or textures.

Follow the steps below to create parallel line refraction:

(1) Create skeletal graphics consisted of a series of open curves that determine the line-filling position and the refraction shape. The sample skeletal figure can be created in such methods as curve combination and reproduction.

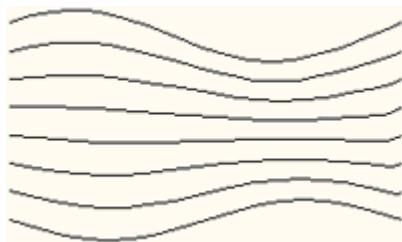


Figure 10-17

(2) Select the skeletal figure.

(3) Select **Tool > Parallel Lines Refraction** to open the **Parallel Lines Refraction** dialog box.

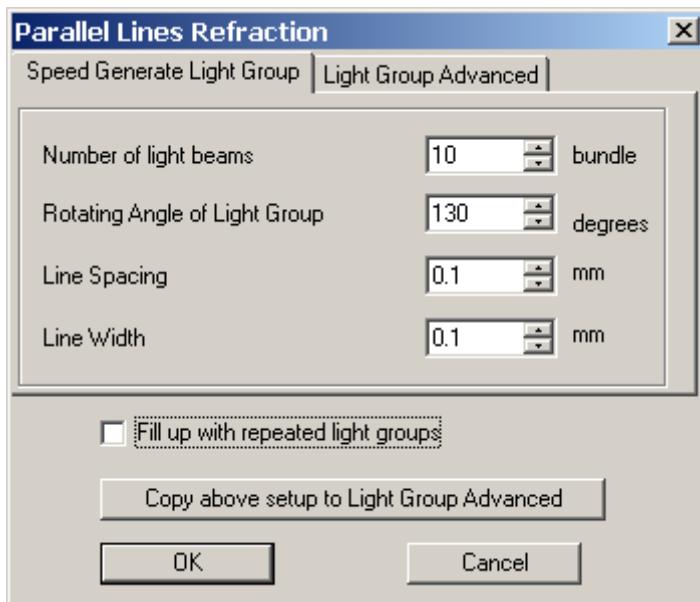


Figure 10-18

(4) Configure the refraction option in the dialog box.

- Select the **Fill up with repeated light groups** check box, the line group will repeatedly fill in the skeletal figure until it is full. Otherwise, only one designated beam is filled.
- The beam structure of each group has the following parameters:
 - **Number of light beams**: different directions in each group.
 - **Rotating Angle of Light Group**: beam direction change.
 - **Line Spacing**: distance of adjacent lines in each beam (generally below 1mm).
 - **Line Width**: width of each beam.
- Configure the beam structures of each group in the following ways:
 - **Quick configuration of the group**

The line width/interval of each beam is equal with the equivalent beam

direction gap.

Click the **Speed Generate Light Groups** option in the dialog box to configure the beam features.

Number of light beams: as set out in the field from 2 to 100 (with user number assumed as 1, the system will automatically generate the refraction with 2 beams).

Rotating Angle of Light Group: beam direction change. In case of the starting angle of 0°, 3 beams and 90° texture rotating angle, the system will generate the starting beam angle of 0°, the first beam angle of 30°, the second beam angle of 60°, and then 120° and 150° to 180° with the angle gap of 30° for subsequent beams.

Line Spacing: as set out in the field from 0.001 to 10.

Line Width: as set out in the field from 0.001 to

➤ **Customize the group configuration**

Users may configure the line width, line interval, rotating angle and direction of each beam in one group independently.

Click the **Light Group Advanced** option in the dialog box, configure the beams.

The list in the dialog box represents the features of the lines with each row representing one beam and each column representing one feature. The serial number represents the order of the beams, the beam angles constitute the group rotating angle with the texture phase gap representing line direction as the angle gap of adjacent beams. There are also texture interval and texture width.

To modify and edit the beam data in the list, please refer to the content of Central Radiation Refraction.

- Select the **Copy above setup to Light Group Advanced** button, the data on **Group Quick Create** pane will be copied to the list of **Group Senior Customization** pane.

(5) Click **OK** in the dialog box to generate the refraction effect.

The figure shows the refraction effect of quick group

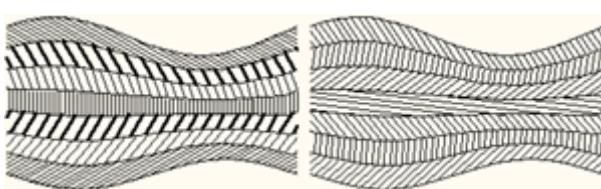


Figure 10-19

Note: In parallel line refraction, the skeletal figure may be a graphic object, or

a group object or multiple graphic objects. However, it always consists of multiple closed paths.

10.1.4 Modify refraction parameters

After the refraction operation of a graphics, the user may also change the refraction via the **Modify refraction parameters** function as follows:

- (1) Select the generated refraction beam group, select **Object > Ungroup**;
- (2) Select the target group, enter into **Tool > Modify Refraction Parameters**, change the bevel, interval and outline in the **Modify Refraction Parameters** dialog box;

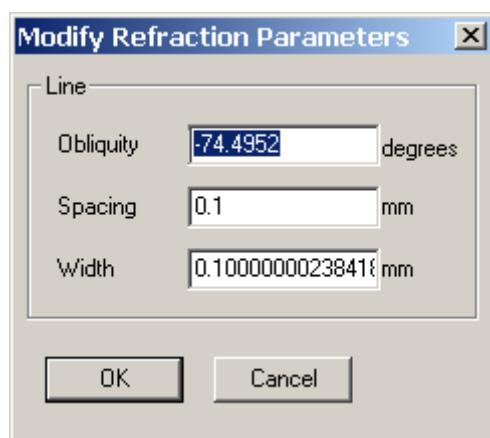


Figure 10-20

- (3) Click **OK** in the dialog box to complete the operation.

10.1.5 Pick up graphic refraction outline

Pick up the refraction outline as follows:

- (1) Select the generated refraction beam group, select **Object > Ungroup**;
- (2) Select the target beam at the edge, click **Tool > Border Refraction Object** to generate the refraction outline.

10.2 Generate bar code

Founder SuperLine bar code tool can automatically insert the standard bar codes to the page:

Procedures:

- (1) Select **Tool > Bar Code** to open the **Bar Code** dialog box;

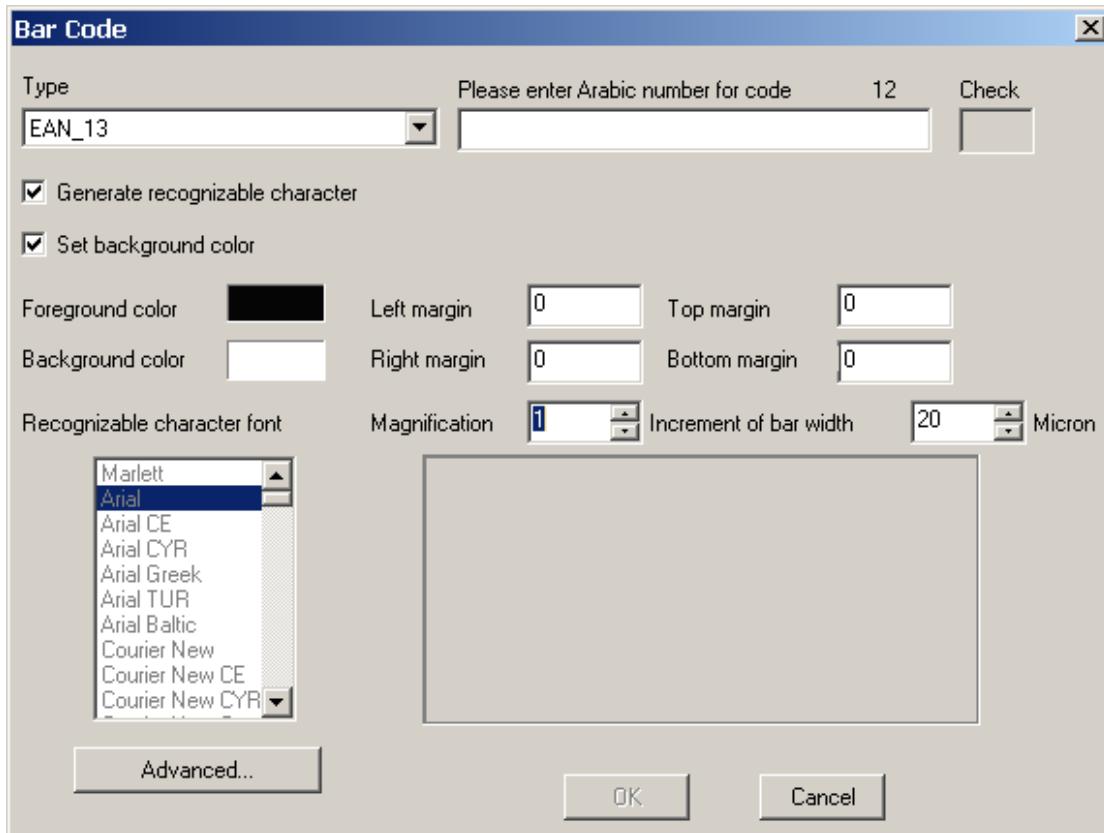


Figure 10-21

(2) After configuration of all options of the bar code, click **OK**. The cursor

becomes ;

(3) Click at the target position to generate the bar code as shown in the figure below, or cancel it by pressing the **Esc** key.



Figure 10-22

In the **Bar Code** dialog box, users may configure the following bar code options:

10.2.1 Types of bar codes

Select the types of bar codes in the **Type** list box, including USA UPC-A, UPC-E, European EAN-13 and EAN-8, ISBN, ISSN, Interleaved 2 of 5 Code, Code 3 of 9, Codabar code, Code 128, Code 93, and etc.

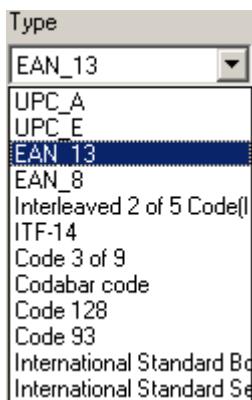


Figure 10-23

10.2.2 Bar code data

Enter the bar code data in the **Please enter Arabic number for code** edit box (figure below) that is acceptable by the active type of the bar code. As for Code 128, you have to select the starting code, switchover code and data code that cannot be inputted directly in the edit box.

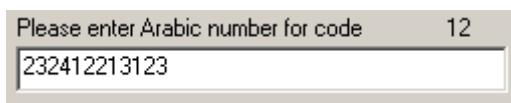


Figure 10-24

The table below shows the types of bar codes, code length and applicable character sets:

Types	Input length	Character set
UPC_A	11	0-9
UPC_E	6	0-9
EAN_13	12	0-9
EAN_8	7	0-9
Interleaved 2 of 5 Code	≤ 40	0-9
ITF_14	13	0-9
Code 3 of 9	≤ 40	0-9, A-Z, '-', '.', blank, '\$', '/', '+', '%'
Codabar code	≤ 40	0-9, '-', '.', '\$', '/', '+', ':'
Code 128	≤ 40	Set A, B and C (as set out in national standard GB/T15425-94)
Code 93	≤ 40	0-9, A-Z, '-', '.', blank, '\$', '/', '+', '%'
ISBN	12	0-9

ISSN	12	0-9
------	----	-----

The code length appears above the edit box. For fixed-length bar codes like UPC_A, UPC_E, EAN_13, EAN_8, ITF_14, ISBN and ISSN, the input character length will be the same as the bar code length. For other length-adjustable bar codes, the code length refers to the maximum characters allowed for input.

10.2.3 Check character of bar codes

Bar codes like UPC_A, UPC_E, EAN_13, EAN_8, Code 128, Code 93, IFT_14, ISBN and ISSN have the check characters. For Interleaved 2 of 5 Code and Code 3 of 9, users can add the check character by checking **Add checkout** option. Codabar Code has no check character.

The check character will be automatically generated after input of the specified-length bar code characters.

10.2.4 Recognizable character

The identifiable character refers to the numbers below the bar code. Users may generate the identifiable character below the bar code by selecting the **Generate recognizable character** option.

10.2.5 Bar code color

Foreground color, i.e. the color of the bar code symbols and the identifiable characters, is black by default. The display color of the **Foreground color** button is the same with the color of the bar code. Click the button to pop up the **Color** dialog box to select other colors. When the **Set background color** option is checked, the bar code will have the display color of the **Background color** button as the background color (white by default). You can also select other background color by way of the **Background color** button.

10.2.6 Left/right/upper/lower boxes

When the **Set background color** option is checked, the background color area will be added the left/ right/upper/lower boxes on the bar code size with the box values input in the fields (in the units of mm).

10.2.7 Font of recognizable characters

The default font of the recognizable characters is Arial. UPC_A, UPC_E, EAN_13, EAN_8, ISBN and ISSN bar codes allow for no other fonts. In case of no default font or to other bar codes, users may select another font in the **Recognizable character font** list box.

10.2.8 Magnification

The magnification of the bar codes can zoom in or out the bar codes on the page. The value of **Magnification** ranges from 0.8 to 2. (Magnification of ITF_14 from

0. 625 to 1.2)

10.2.9 Increment of Bar Width

The bar width increment refers to the bar width increase in printing, which, in the units of micron, may be inputted in the **Increment of bar width** field. It ranges from 0 to 99.

10.2.10 Preview of bar codes effects

There is the bar code preview window at the lower right corner of the dialog box. For fixed-length bar codes like UPC_A, UPC_E, EAN_13, EAN_8, ITE_14, ISBN and ISSN bar codes, the bar codes can be displayed only after the input of the specified length. Other bar codes allow for display while inputting the characters.

10.2.11 Special configuration

The above section introduces the common configuration of all types of bar codes. Some bar codes also feature special configurations that will be listed below the **Please enter Arabic number for code** edit box only when the relevant types of the bar codes are selected.

Interleaved 2 of 5 Code and Code 3 of 9

The following figure shows the special configurations, including:

- **Add checkout:** Check the **Add checkout** option to generate the check code;
- **Wide bar/Narrow bar:** The **Wide Bar/Narrow Bar** option controls the wide/narrow-bar proportion. Valid value ranges from 2.0 to 3.0.

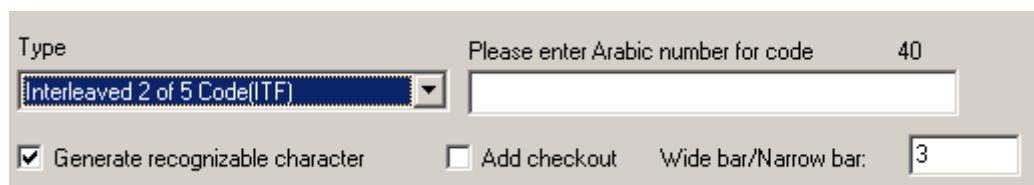


Figure 10-25

Codabar Code

The figure below shows the special configurations including:

- **Wide bar/narrow bar:** This option controls the wide/narrow-bar proportion. Valid value ranges from 2.0 to 3.0.
- **Start/End codes:** You can select a starting code and an ending code (a, b, c or d) in the **Start** and **End** list box.



Figure 10-26

Code 128

The figure below shows the special configurations including:

- **Start code and transform code:** Code 128 must start from the start code while the transform code can change the active character set. The start codes are **STARTA**, **STARTB** and **STARTC**. And the transform codes are **CODEA**, **CODEB**, **CODEC** and **SHIFT** as shown in the figure below.

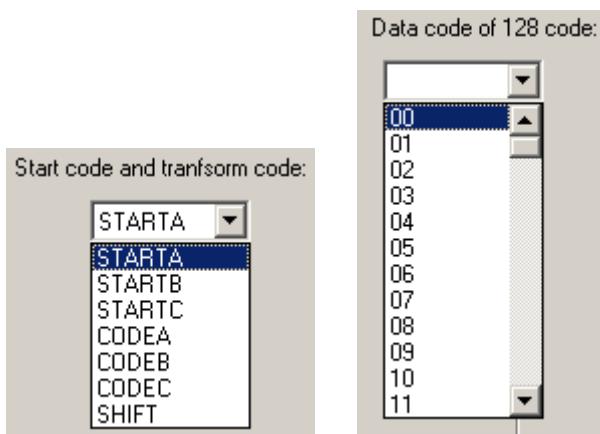


Figure 10-27

The start code and transform code will be selected in the **Start code and transform code** box instead of direct input in the **Please enter Arabic number for code** edit box. In case of unauthorized selections, a message box will pop up to invalidate the options, otherwise the selected contents will be added to the current position of the **Please enter Arabic number for code** edit box in the brackets, which can only be deleted as a whole.

- **Data code of 128 code:** You may select the data not represented by characters in the **Data code of 128 code** list box as shown in the figure below.

ISBN

The figure below shows the special configurations including:

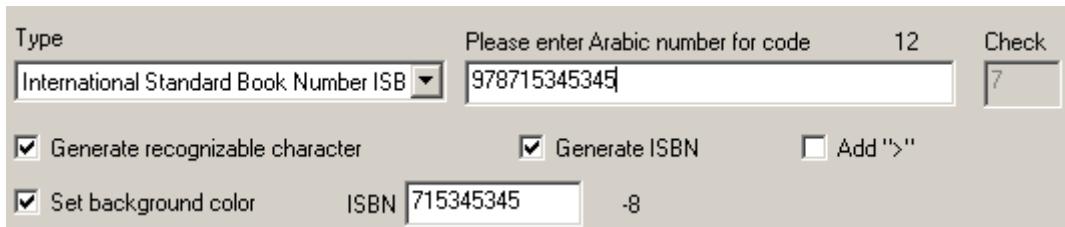


Figure 10-28

- **Generate ISBN:** Select the **Generate ISBN** check box to generate ISBN number.
- **ISBN:** An ISBN number consists of 10 numbers and 3 “-” separators with the last digit as the check digit and the other 9 digits consistent with those of the bar code characters (excluding the check digit). After inputting the bar code characters, the ISBN number will be automatically generated with the former separator retained and the check code displayed outside of the edit box. While meeting the above conditions, the first 9 numbers and the first 2 separators of ISBN number may be modified in the edit box.
- **Add ‘>’:** Select the **Add ‘>’** check box to generate ‘>’.

ISSN

The figure below shows the special configurations including:

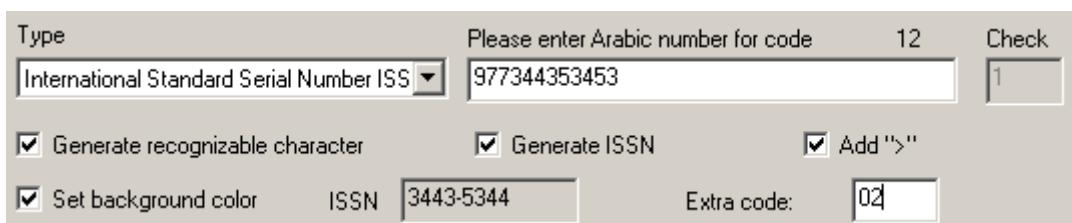


Figure 10-29

- **Generate ISSN:** Select the **Generate ISSN** check box to generate ISSN number.
- **ISSN:** An ISSN number consists of 8 numbers and 1 “-” separator. The ISSN number will be automatically generated upon the input of the bar code characters subject to no modification.
- **Add ‘>’:** Select the **Add ‘>’** check box to generate ‘>’.
- **Extra code:** 2-digit number representing the issue number, input in **Extra code** field.

10.2.12 Advanced options

Click the **Advanced** button to open the **Advanced** dialog box, in which to configure other senior options.

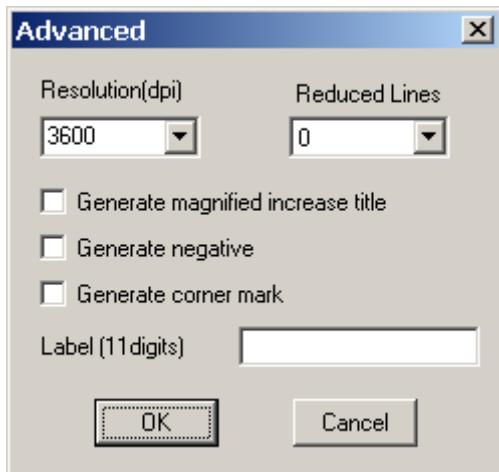


Figure 10-30

Resolution

A user may select the output resolution (DPI) in the **Resolution** list box, which has no impact on the bar code generation when the **Reduced Lines** is set to "0". To define this option, you may select or input a value.

Reduced Lines

The **Reduced Lines** list box will allow users to determine whether to reduce the lines. Inputting the value of "1" will reduce 1 line, i.e. (1/resolution) inch, otherwise there is no impact on the bar code.

The above two options are specifically designed for Founder PSPNT. To improve the output precision, the **Resolution** should be consistent with that of the output device, and the **Reduced Lines** is set to 1.

Generate magnification increase title

Select the **Generate magnification increment title** option to generate the rate increment title in the format of M xx B yy. xx refers to the multiplication of magnification and 100, and yy the bar width increment (micron).

Generate negative

Select the **Generate negative** option to interchange the foreground color and the background color.

Generate corner mark

Select the **Generate corner mark** option to generate superscripts around the bar code, marking the valid area of the bar code, excluding the magnification increment title and label.

Label

The label is an 11-digit number to mark the bar code inputted in the **Label** field.

10.3 Fractal graphics

It is easy and simple to generate the fractal by the theory of repetitive iterative. Founder SuperLine supports five fractal generation modes, i.e. Dragon Curve, L System, Wall Texture, Fractal Generator and Random Texture.

10.3.1 Dragon Curve

Dragon curve replaces a straight line segment with two lines in the right angle to create a broken line, then replace each straight line segment of the broken line with two short lines in the right angle, repeat the steps in designated times.

Procedures:

- (1) Select a straight line segment;

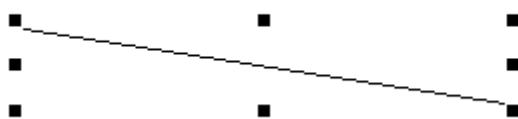


Figure 10-31

- (2) Select **Tool > Fractal > Dragon Curve**. The dialog box as shown in the following figure now pops up.

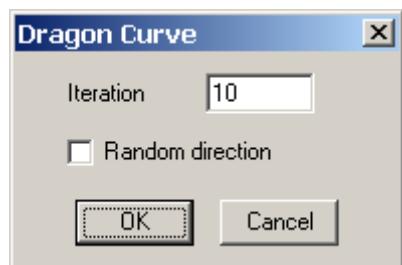


Figure 10-32

If the user does not select a straight line segment, then the warning dialog box will be displayed as shown in the figure below.

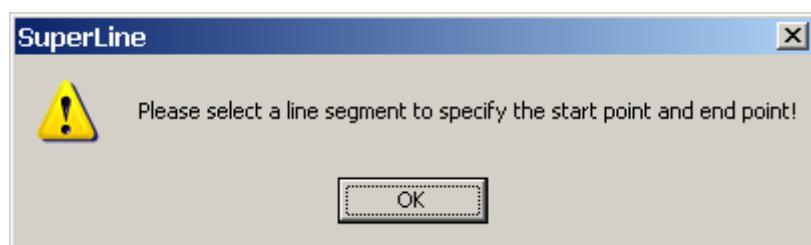


Figure 10-33

- (3) Fill in **Iteration** filed in the dialog box, and click **OK**. The iterative direction will remain the same in the generation of the standard dragon curve as shown in the figure below.

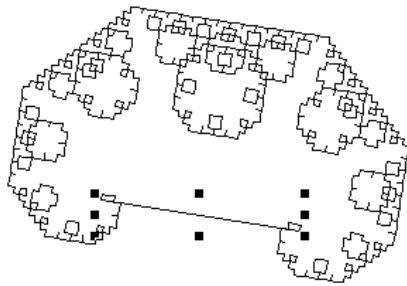


Figure 10-34

If the **Random direction** option is selected, variations of the dragon curve will be generated in unpredictable shape.

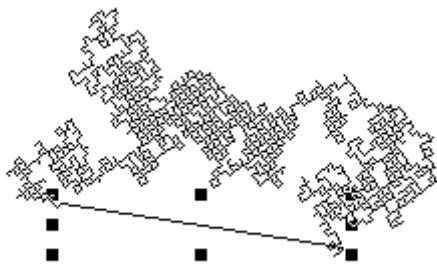


Figure 10-35

10.3.2 L-System

L-System generates fractal graphics via the form syntax. The generating element will replace the initial element to create the new initial element, which will take place repetitively until reaching the iterative times.

Procedures:

Select **Tool > Fractal > L-System**, and the **L-System** dialog box, as shown in the following figure, appears.

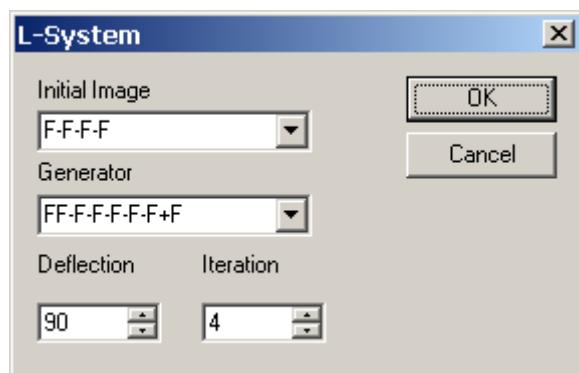


Figure 10-36

Select the parameters and click **OK** with the effect shown in the figure below.



Figure 10-37

10.3.3 Wall Texture

Wall Texture will generate the pattern like a wall. To do this, select **Tool > Fractal > Wall Texture**. The effect is shown as follows:

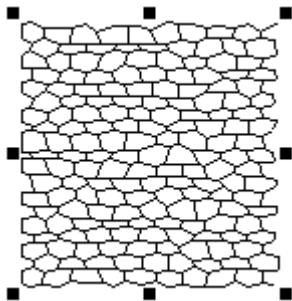


Figure 10-38

10.3.4 Fractal generator

The fractal generator can generate some special fractal patterns and the paths with very simple operation.

Select **Tool > Fractal > Fractal Generator**, and the **Fractal Generator** dialog box appears now.

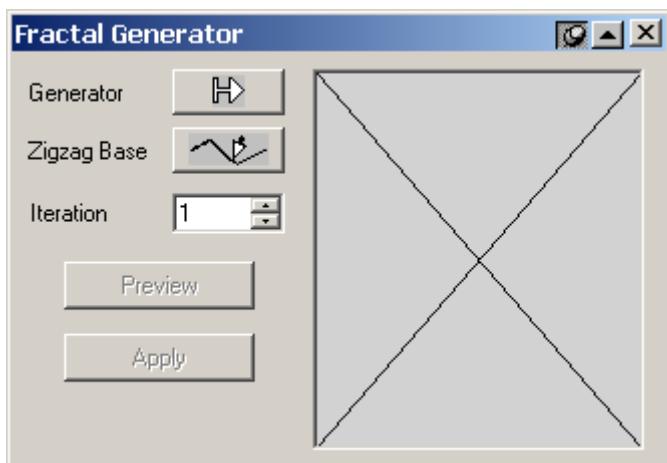


Figure 10-39

Click the **Generator** button , the cursor will become , click an open curve/zigzag line. In case of successful selection, the arrow in the **Generator**

button will become black, or otherwise the warning dialog box as shown in the figure below will appear.



Figure 10-40

Click the **Zigzag Base** button , the cursor will become , select an open curve/broken line.

In case of successful selection, the arrow in the **Zigzag Base** button will become black.

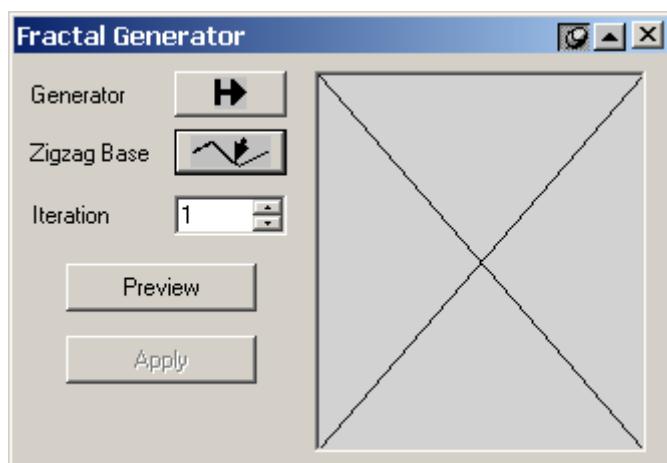


Figure 10-41

Designate the iterative times, click **Preview**, the right **Preview** window will display the iterative results.

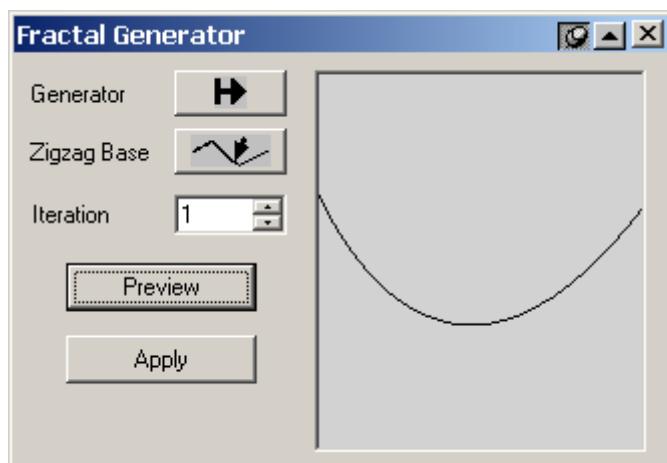


Figure 10-42

If satisfied with the new fractal graphics, the user may click **Apply**, the fractal graphics will be generated around the **Zigzag Base**.

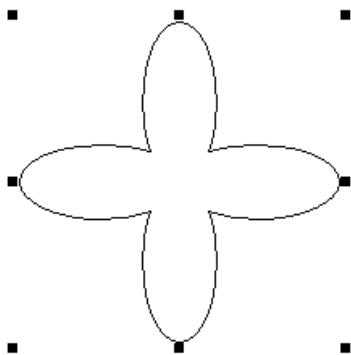


Figure 10-43

Notes:

- ① The graphic generation is linked with the curve direction.
- ② Fractal graphics can have some characteristics that regular polygons generally have, and symmetrical in shape. But only when Zigzag base has polygon characteristics, the fractal graphic generated can have these characteristics. The user can eliminate the polygon characteristics by way of Convert to Curve.

10.3.5 Random Texture

Founder SuperLine 4.60 adds a new anti-counterfeit effect – random texture.

Procedures:

- (1) Select **Tool > Fractal > Random Texture** to open the **Random Texture** dialog box shown as in the following figure.

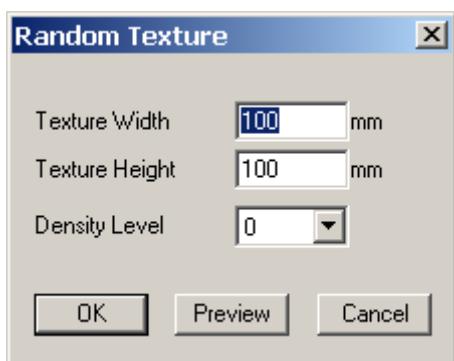


Figure 10-44

- (2) You can define the width and height of the generated texture, and the density level as well (bigger value represents higher level).
- (3) Click **OK**. The texture effect you defined will appear on the page.

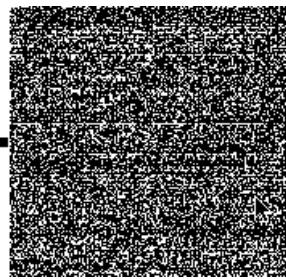


Figure 10-45

(4) Import an image, and select the image and the texture together, and then apply the **Engraving on Image** function. The generated engraving is the new screening effect of the random texture.

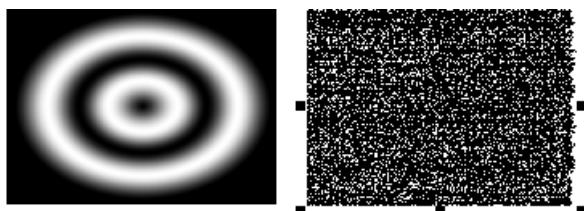


Figure 10-46

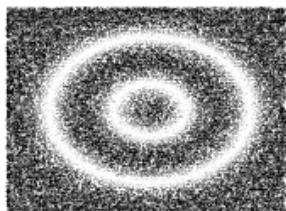


Figure 10-47

Note: When the density level is set to a lower value, the generated screening effect may be NOT good enough. Therefore, you should set a comparably higher level for the sake of effect. But, higher density level may affect the speed the random texture is generated. Please set the level according to your actual demand.

Appendix: Glossary of Terms

The following is a glossary of terms as they relate to counterfeiting and document review.

Artificial Watermark

This is usually a very light screen printed on the back of some checks. It can also be a type of very light or just off-white color ink.

Bar code

SuperLine provides **Bar Code** function to facilitate the generation, primarily for packaging industry.

Copiers

Primarily color copiers are used in counterfeiting. A copied document will have a shiny texture and the toner will rest on top of the paper, not in the paper. Also, there will usually be no actual paper visible, at least with currency, since the copier will fill in with toner any area that is not white. Also they are unable to reproduce fine line detail, holograms, kennograms and micro printing.

Design

This is the overall design of the document to make it both readily identifiable as genuine, and difficult to reproduce or counterfeit.

Filter and Fish-eye

Handy for texture generation, Filter and Fish-eye are two unique functions offering special effect with personal touch for design professionals.

Fine Line Printing

Using lines for both texture and shading, fine line detail is difficult to reproduce by a copier, but can be reproduced, to a degree, with photolithography and offset presses.

Guilloche

Guilloche is an ornamental pattern formed of two or more curved bands that interlace to repeat a circular design. The most eye-catching element, guilloche is often used on banknote, bill, identification card, and passport for added security against counterfeiting. Line density and interlacement are used to enhance the effect of a guilloche. SuperLine provides a set of power tools to generate guilloche in different shape without effort.

Hologram

A laser-produced image that shifts when viewed from different angles. An example is the hologram dove on the VISA card and the hologram globe on the MasterCard card.

Intaglio

It is a process of reverse image printing on special intaglio printing presses to produce ridges of ink on the surface of the document. It is the intaglio process that gives travelers checks, currency, and some stock and bond certificates the feel of money.

Kennegram

It is similar to a hologram, but the image doesn't move; it shifts from one image to another image. An example would be a bust facing right then facing left when viewed from different angles.

Lace

Coming in a variety of patterns, lace is made of one or more elements being continuously repeated until they form a web-like pattern, which is the framework of texture. SuperLine offers **Auto Lace** function to ensure smooth joint between laces, a killer app other security design system is still dreaming to have.

Laser Scanners

There are two primary types of laser scanners, the commercial desktop and the industrial drum scanner. The commercial desktop scanners are not able to reproduce the fine line detail. The industrial drum scanners are made primarily for the semiconductor industry scans.

Latent

Latent immerses into an image many other elements. For example, you can immerse text or image into texture or guilloche. Latent is often used in banknote printing technology. SuperLine develops special cross/straight line fill functions for enhanced latent applications.

Lithography

The process of producing an image on a specially prepared surface, usually zinc or steel for counterfeiting. The process produces unusually high quality images.

Micro printing

Printing that can't be readily seen by the unaided eye or any copier or commercial scanner.

Microtext

Microtext is generated by very small letters instead of lines, e.g., replacing a line segment with a line of letters which usually come shorter than 0.2mm. Microtext

is often applied in the anti-counterfeit design for certificate and identification card.

Because SuperLine allows very small letters to form microtext, the designer only needs to care about whether the output hardware can achieve the accuracy in post press.

Offset

A type of printing where the image is positive and is offset to a third roller before printing on the document.

Paper Making

A process where fibers are combined in a liquid state with adhesives and binders and then poured or laid out on a screen to first drain and then dry. The paper can then be further processed.

Photograph

An image of a person either in film or digital image.

Relief

Relief is made by bending or folding a group of curves to outline a figure or forms from a flat background, just as in sculpture. Relief effect is seen in such everyday items as banknote, receipt, invoice, bill, logo, trademark, etc.

SuperLine offers a whole set of relief tools including relief on straight line, curve, image, etc. Furthermore, the angle, height and smoothness of relief can all be adjusted to produce a natural looking effect. Relief can also be applied to "lock-opening" technique that makes use of the light interference phenomenon against forgery.

Refraction

Refraction is made available in two types: graphic refraction and image refraction. As accomplished by embossing technology in press print, refraction is also known as embossment. According to the line's direction, width and spacing, the refraction makes use of the light's reflection principle to obtain various diverging, rotary and glowing effects. Graphic refraction is often found in packaging applications for cigarette, liquor and medicine, whereas image refraction, in the making of artwork and metal image.

SuperLine contains a special graphic refraction module which significantly improves the platemaking efficiency and quality for refraction effect.

Texture

Texture is made by repeatedly varying an element so that it formulates an area of regular, interwoven, and interchangeable gridlines. In our daily life, such kind of background texture can be found in many applications including banknote, check book, air ticket, ID, badge, etc., with the line formation being sparse or

dense, visible or invisible.

Texture consists of many fine lines coming in different light colors. Only one layer of texture may be seen at a quick glance whereas more detailed representation of variations can be perceived at the second look.

SuperLine offers a complete set of element making tools including copy, mirror and array to generate texture at ease.

A professional texture maker, SuperLine can generate common texture and gradient texture, the latter coming with different line density, width and color gradient.

Common texture is made by multiple identical elements repeating and overlapping themselves and arraying in regular pattern that is stepped and repeated. Usually, flat texture is mostly used in common design. Artistically speaking, flat texture displays tranquility and harmony in uniform step and repeat.

Gradient texture, on the other hand, is created by varying density, width, color, element and size. Emerging in recent years, gradient texture has become the most insurmountable obstacle for counterfeiters to cross over.

Watermarks

A process in making paper that shifts the density of paper fibers to produce an image when held up to the light. It is a very common feature in bills worldwide.